Subject Index to Volume 67

A

Abdomen, extrapulmonary volume displacements, 1785
Abdominal wall, displacement, during forced oscillations, 1472
Acetylcholine
  airway hyperreactivity to, autosomal recessive inheritance of, 1125
  myosin content and, airway, 1331
  receptor reserve and β-adrenergic sensitivity, tracheal smooth muscle, 1294
  release, cholinergic neurotransmission and, trachea (ferret), 2397
  response to, pulmonary vascular bed, 1388
  vascular resistance and compliance and, pulmonary circulation, 1495
  venular responses, hypoxia and anoxia, 2147
Acetylcholinesterase, activity, airway contractile properties and (swine), 174
ACh: *see* Acetylcholine
Acid-base balance
  CSF, furosemide and, 563
  phosphate metabolite regulation and, brain, ^{31}P-NMR, 2527
Acidosis
  bicarbonate, extracorporeal bicarbonate space after, 2331
  metabolic and respiratory, aldosterone secretion during (A), 2165
  respiratory, furosemide and CSF ions during, 563
Acrolein, smoke exposure, pulmonary edema after, bronchial artery ligation, 1001
Adenine nucleotides
  degradation, during exercise, skeletal muscle, 116
  metabolic alterations during fatigue, diaphragm, 210
Adenosine
  adenine nucleotides and, metabolism, bronchial (sheep), 1041
  hypoxia and hyperoxia, ventilatory response to, 1150
  hypoxic ventilatory depression and, 541
  respiratory control and, during development, 1
Adenosine diphosphate, metabolic change and, muscle fatigue, 648
Adenosine monophosphate
  inhalation, methacholine airway responsiveness and, 792
  metabolic change and, muscle fatigue, 648
Adenosine monophosphate, cyclic
  endothelial barrier properties (A), 1309
  vasoactive agonists and, permeability of endothelial monolayers, 1997
Adenosine triphosphatase, activity, strength training in aging muscle, 1401
Adenosine triphosphate
  hypoxia, glucose cell metabolism and, 484
  metabolic change and, muscle fatigue, 648
  muscle metabolism, during treadmill sprinting, training effects, 2376
Adenovirus, persistence (A), 2186
Adipose tissue, brown: *see* Brown fat
Adipsin, complement factor D activity and, obesity (A), 2186
Adrenaline: *see* Epinephrine
Aerobic metabolism
  oxygen transport, exercise (horse), 862
  running performance, model, 453
Aerosol
  deposition
    lung, asymmetric airway obstruction and (sheep), 2579
    lung structure parameters, model, 2014
  hypertonic, bronchoconstriction induced by, lung periphery, 2571
Afferents
  nonmyelinated, stimulation effects on respiratory motor output, 2249
  vagal, tracheal gland secretion, reflex increase in, 682
  visceral
    expiratory muscle activation, midline laparotomy effects, 599
    serotonin excitation and, 584
Aging
  contractile properties and, muscle, 1401, 1409
  exercise and food restriction, skeletal muscle lipid peroxidation in, 69
  physical activity, musculoskeletal injuries and (A), 2170
  trained subjects
    lipid metabolism, 1638
    sodium-potassium pump concentration in vastus lateralis muscle, 2491
Air
  dry, peripheral lung responses to, 1727
  extraventilatory leaks, bronchopleural fistula, 1591
  humid, viscosity of respiratory gases, 472
  velocity, tracheal imaging during forced expiration, 1032
Airflow
  asymmetric oscillations, mucus clearance by, 614
  expiratory retardation, lung volume effects, 1192
  inertia, during inhalation and exhalation, 1649
  ultrasonic meter, pulsed diagonal-beam, 2639
Air spaces, lungs and, protein clearance, awake state (sheep), 1887
Airway
  asymmetric oscillations, mucus clearance by, 614
  awake inspiratory occlusion, hyperpnea and hypocapnia (A), 905
  circulation: *see* Circulation
  constriction, phospholipase A_2, 2495
  contractile agonist-specific relaxation, 181
  contractile properties, acetylcholinesterase activity and (swine), 174
  drying
    bronchoconstriction induced by, lung periphery, 2571
    peripheral lung responses to, 1727
  dynamics, lobar emptying rates and, 1164
  epithelium
    chloride activity pathways (A), 1310
    chloride transport, cystic fibrosis (A), 1310
  extrathoracic, measurement of flow resistance, 933
  flow distribution, during inhalation and exhalation, 1649
  function
    menstrual cycle effects, asthma and (A), 2648
    metabolic and pharmacokinetic activity (sheep), 1041
  high-frequency oscillation, lung pressure and gas transport during, 985
  hyperreactivity, serotonin, autosomal recessive inheritance of, 1125
  hyperresponsiveness
    antigen challenge, tissue eosinophilia (guinea pig), 1133
    inflammation and PAF (sheep), 406
    tachykinins, virus effects, 1504
  level, edema liquid entry, lung, 2234
  local anesthesia, bronchoconstriction and, 2454
  methacholine responsiveness, adenosine monophosphate effects, 792
  mucosa, microvascular permeability, 917
  myosin content, acetylcholine and, 1331
  narrowing, obstructive sleep apnea, 2565
  nonadrenergic inhibitory nervous system, sensory receptors and reflex pathways in (A), 1303
  obstruction
    aerosol deposition and, lung (sheep), 2579
    chemosensitivity and, during sleep, 1630
  parenchyma, dose-response behavior comparison, 1220
  patency, application of negative pressure pulses, 366
  pharyngeal, inspiratory loading, masseter muscle, 270
  pressure drop in, Bernoulli equation (A), 2171
  pressure-volume curves, flow interruption during forced expiration, 2631
  reflex: *see* Reflexes
    excitation of C-fibers, respiratory drive effects, 203
  responsiveness
    excitation of C-fibers, respiratory drive effects, 203
    histamine challenges and, asymptomatic asthmatics, 2622
    longitudinal variability in (A), 2172
    neurokinins A and B, degradative enzyme modulation of, 2504
  secretion, reflex increase in, pulmonary receptors and, 682
  tracheal, occlusion effects, hyoid muscle length, 2296
  upper
    negative pressure effects, sleeping infant, 749
    sleep apnea, respiratory drive effects, 973

Albumin
  exclusion, lung fluid volume measurement and (sheep), 1323
  extravascular, accumulation, lung, 1479
  fluid conductivity and, pulmonary interstitium, 606
  surface-induced conformational change, albumin receptor effects (A), 1716
  transport, endothelial monolayers, 1997
Aldosterone, exercise responses, menstrual status and, 736
Alkaline, environment, ammonia and urea dynamics in adaptation to (fish), 2176
Alkalinization, bicarbonate, extracorporeal bicarbonate space after, 2331
Alkalosis
  induced, exertion during exercise and, 1862
  metabolic, muscle, during exercise, EMG, 1245
Allantoic artery, blood pressure, ECG and BCG, embryo (chick), 478
Allergy, circulation and, tracheal smooth muscle (sheep), 1256
Almitrine
  carbon dioxide interaction and, carotid chemoreceptors, 232
  hypoxia and, dopamine and ventilatory effects, 186
  increased chemoreceptor output, sustained hypoxia, 1157
Altitude
  acclimation, pulmonary gas exchange during exercise and, 2286
  blood oxygen measurement, Operation Everest II, 2135
  cardiac response to isoproterenol and, 523
  high
    acclimatization, lactate release after, muscle, 1456
    exercise at, renin secretion during β-blockade, 141
Alveolar capsule, closed-chest during flow interruption, 488
Alveolar ducts, morphometric study, based on serial sections, 2512
Alveolar plateau, single-breath tests, dilution index format, 1699
Alveolar septum, borders, lengths and topology, 1930
Alveoli
  aerosol deposition, lung structure, 2014
  permeability: *see* Permeability
  secretions, metabolic relations, 414
Amenorrhea, fluid regulation, exercise effects, 736
Amino acids, exchange, plasma and erythrocytes, 2383
γ-Aminohippuric acid, respiratory control and, during development, 1
Aminophylline
  hypoxia and hyperoxia, ventilatory response to, 1150
  muscle contractility and (frog), 671
Ammonia, breakdown, during exercise, skeletal muscle, 116
Amniotic fluid, reduction, lung liquid volume and secretion rate during, fetus (sheep), 2401
Amphiregulin, structure and function (A), 504
Anaerobic threshold, lactate, incremental exercise, 885
Anaphylaxis, mast cell role in (A), 913
Anemia
  lactate production and, during exercise, 756
  muscle oxidative capacity effects and, exercise endurance, 765
Anesthetics, apneic threshold and (lamb), 643
ANF: *see* Atrial natriuretic factor
Angiotensin, blockade: *see* Blockade
Angiotensin-converting enzyme
  antigen synthesis, endothelial cell, hypoxia effects (A), 1715
  inhibition, splanchnic circulation, 786
  metabolism, bronchial (sheep), 1041
Angiotensin II
  ANF effects, right ventricular overload, 1606
  CSF, sweating in heat stress and (monkey), 134
Anorexia, interleukin 1-induced, prostaglandin effects (A), 2181
Anoxia, venule response, pulmonary, 2147
Anthropometry, bioelectric impedance, body composition, 1643
Antigen, circulation and, tracheal smooth muscle (sheep), 1256
Antigen challenge, airway hyperresponsiveness, tissue eosinophilia (guinea pig), 1133
Anti-idiotypic antibody, antibody response against (A), 502
Antioxidant enzymes
  cimetidine reduction of (lamb), 2586
  lung injury, blood sulfhydryl levels and, 1070
α_1-Antitrypsin
  aerosolized DNA-produced, fate of (A), 502
  deficiency (A), 908
    liver and lung disease associated with (A), 2650
Apnea
  hypoxic ventilatory depression and, 541
  lower airway reflexes, capsaicin-induced, 1428
  obstructive sleep, flow-volume curves in snoring patients (A), 495
  prolonged, upper airway chemoreflex in infants (A), 493
  sleep
    masseter muscle activation with inspiratory loading, 270
    nasal obstruction and, 970
    obstructive, glottic and cervical tracheal narrowing, 2565
    tracheal hysteresis in, 1349
    upper airway, respiratory drive effects, 973
  threshold, maturation and anesthetic effects (lamb), 643
Arachidonic acid
  endogenous, pulmonary edema, 846
  metabolism, pH effects, 445
  phospholipids and, potassium channels activated by, cardiac cells (A), 1715
  prostacyclin gradient, trachea, 276
Arrhythmias
  complex, modeling (A), 1302
  respiratory sinus, denervated heart, 1447
Arterial desaturation, during maximal exercise, 1119
Arterioles, oxygen loss rate, muscle (A), 497
Arthritis
  chronic inflammatory, cytokines in (A), 506
  experimental, cessation of neutrophil influx (A), 2181
  rheumatoid, PDGF and IL-1 interactions in (A), 2652
A23187: *see* Ionophore A23187
Aspartate aminotransferase, skeletal muscle, strength training effects, 123
Asthma
  airway hyperresponsiveness, inflammation and PAF (sheep), 406
  antigen challenge, tissue eosinophilia (guinea pig), 1133
  asymptomatic, histamine challenge, airway responsiveness to, 2622
  bronchial circulation, metabolic and pharmacokinetic activity (sheep), 1041
  exercise-induced, response to dry air, lung, 1727
  leukotriene and histamine effects, bronchoconstrictor (A), 2648
  lung, vasoactive intestinal polypeptide in (A), 1305
  methacholine responsiveness, adenosine monophosphate effects, 792
  mild, capsaicin-induced bronchodilation, 856
  mucosal permeability in, technetium-99m-DTPA (A), 1303
  nodose neurons, serotonin excitation of, 584
  plasma ANF, exercise, hyperpnea, and bronchoconstriction effects, 2427
  reflex bronchoconstriction, muscarinic agonist effects, 2461
  sleep effects, nocturnal bronchoconstriction and ventilatory patterns, 243
  spontaneous, intensive treatment, deep inhalation effects (A), 2647
Athletes: *see* Exercise
ATPase: *see* Adenosine triphosphatase; Calcium-ATPase
Atrial natriuretic factor
  β-adrenoceptor blockade effects, exercise at altitude, 141
  clonidine and dihydralazine effects, 938
  hypoxia and hypercapnia effects, awake state (A), 493
  release, alveolar hypoxia and, awake state (lamb) (A), 903
  right ventricular overload and, 1606, 1612
  sodium nitroprusside and, pulmonary vasodilator responses to, 2269
Atrial natriuretic peptide
  natriuresis, during negative pressure breathing (A), 1705
  plasma
    acute hypoxia (A), 1304
    exercise, hyperpnea, and bronchoconstriction effects, 2427
  pulmonary edema-susceptible subjects, hemodynamic responses, 1982
Atriopeptin, synthesis, right ventricular, hypertrophy due to hypoxia (A), 2174
Atrophy
  gastrocnemius muscle fibers, periodic weight support effects, 945
  muscle
    hindlimb suspension effects, 1827
    organ culture (frog), 466

Autonomic nervous system
  local fatigue sensation, static contraction and, 980
  sympathetic neural activity, isometric exercise, 1801
  vascular resistance, control during exercise, 1791
Autoradiography
  calcitonin gene-related peptide vasodilation, pulmonary vessels, 1265
  hypoxia, glucose cell metabolism and, 484
  muscle growth, hindlimb suspension effects, 1827
AVP: *see* Vasopressin
Awake state
  cold exposure, hypoxia effects on metabolic rate, 32
  hypoxia, thermal polypnea and, 578
  oxygen consumption, cardiac output and, normobaric hypoxia, 1551
  protein clearance, air spaces and lungs (sheep), 1887
  sympathetic nerve activity, measurement of, 250
  thoracic surgery, regional shortening of diaphragm after (sheep), 2357

B

Ballistocardiography, ECG and, blood pressure, embryo (chick), 478
Basal metabolism, energy, thermal regulation and, bed rest and spaceflight, 507
Basophils, adherence, vascular endothelium, IgE-dependent regulation (A), 2177
BCG: *see* Ballistocardiography
Bicarbonate, extracorporeal space, acidosis and, 2331
Bioelectric properties, tracheal, neonate (sheep), 824
Biomechanics, force platform, treadmill-mounted, 1632
Blockade
  β-adrenergic
    leucine metabolism and, 221
    response to exercise, sedentary and active subjects, 103
  β-adrenoceptor, effects on renin-aldosterone and α-ANF, exercise at altitude, 141
  angiotensin, splanchnic circulation and, 786
  ganglionic, sympathetic nerve activity, awake state, 250
Blood
  coagulation, high-altitude pulmonary edema, 1336
  constituents: *see* specific constituent
  gas: *see* Gas
  oxygen saturation, measurement, Operation Everest II, 2135
Blood cells, accumulation, lung, method of evaluation, 1479
Blood flow: *see also* Circulation; Microcirculation
  carotid body, chronic hypoxia effects, 239
  cerebral, dynamic exercise and, 744
  coronary, exercise training effects, 1140
  femoral, trapping, respiration after exercise and, 2608
  forearm
    responses to aerobic training, 894
    submaximal exercise, 324
  isolated diaphragm, 2141
  measurements, radiolabeled microspheres (A), 2165
  muscle, preexercise anticipatory response, 1855
  pulmonary
    bradykinin effects, fetus (lamb), 1512
    regulation (snake) (A), 2647
    single-breath breath-holding estimate (A), 1709
  regional
    during hypoxia and hypermetabolism, 96
    exercise training and cold exposure (A), 1305
  respiratory muscles, during hypercapnia hyperpnoea, newborn (lamb) (A), 1306
  skin
    conductive and convective heat flow in cold water, exercise in, 2473
    inert gas permeation, model, 1670
  umbilical, ethanol and oxygen effects (A), 498
  vascular resistance, control during exercise, 1791
Blood pressure: *see also* Pressure
  arterial, measurements, exogenous insulin effects, 2335
  changes, during running, 52
  high, pulmonary vasoconstriction reaction to alveolar hypoxia (A), 1708
  muscle mass effects, isometric exercise, 1801
  NMDA effects, ventrolateral medullary surface, 1814
  postural baroreflex stimuli effects, EEG arousal and sleep, 2369
  respiration, during recovery from exercise, 2608
  responses to aerobic training, 894
  simultaneous acquisition, ECG and BCG, embryo (chick), 478
Body
  composition
    bioelectric impedance, 1643
    doubly labeled water test of energy expenditure, 1922
  size, parietal extrapleural and pleural liquid pressure distribution and, 1967
Bohr effect, tissue oxygenation, countercurrent blood flow, model (A), 2169
Bone, density, determinants in weight-bearing athletes, 1100
Brachiocephalicus muscle, interval training effects, draft-loaded (horse), 570
Bradycardia, lower airway reflexes, capsaicin-induced, 1428
Bradykinin
  pulmonary vasodilation and, fetus (lamb), 1512
  sympathetic nerve activity, measurement, awake state, 250
Brain
  blood-free perfused, oxygen supply, measurement by distribution of oxygen pressure (A), 2645
  development, neurochemicals and respiratory control during, 1
  hypothermia, intracellular pH and, ^{31}P-NMR, 2527
Brain stem, split, desynchronized respiratory rhythms in (A), 904
Breathing: *see* Respiration
Bronchi
  hyperreactivity, somatostatin effects on cholinergic neurotransmission (ferret), 2397
  piasma ANF, exercise, hyperpnea, and bronchoconstriction effects, 2427
  reactivity, response to dry air, 1727
  secretions, asymmetric high-frequency oscillation clearance of, 614
Bronchial artery, ligation, pulmonary edema after acrolein exposure, 1001
Bronchial mucosa, clearance, technetium-99m-DTPA (A), 1301
Bronchiole, membrane potential, contracture produced by sodium removal, 2078
Bronchoalveolar lavage, interstitial lung disease, fluid volume effects, 1443
Bronchoconstricting agents
  airway hyperresponsiveness, inflammation and PAF (sheep), 406
  analysis of response, platelet-activating factor, 377
Bronchoconstriction
  β-blocker-induced, anticholinergic blockade of (A), 1708
  dry air-induced, voltage-sensitive calcium channels and (A), 2646
  early and late response to gallopamil, allergy and (sheep) (A), 493
  evoked, measuring respiratory mechanics (A), 2170
  hyperosmotic-induced, lung periphery, 2571
  hypocapnia-induced, tachykinin effects, 2454
  methacholine responsiveness, adenosine monophosphate effects, 792
  normal, sleep effects, asthmatics, 243
  plasma ANF and, 2427
  reflex, muscarinic agonist effects, 2461
Bronchodilation
  capsaicin-induced, mild asthma, 856
  nonadrenergic, adult and young, 1764
Bronchopleural fistula, gas flow in, 1591
Bronchoscopy, fiber-optic, interstitial lung disease, 1443
Bronchospasm, Forssman shock, thromboxane receptors in (guinea pig), 44
Brown fat
  activity, malaria effects, 1020
  blunted febrile response, intravenous endotoxin in starvation, 963
Buspirone, stimulation of respiration (A), 494
Butane, oxygen consumption measurements, artificial ventilation, 2129

C

Caffeine
  ephedrine mixture, cold tolerance and, 438
  physiological response, endurance running (A), 2174
Calcitonin gene-related peptide, vasodilation, pulmonary vessels, 1265
Calcium
  epithelial modulation of tension and, trachealis muscle, 713
  extracellular, skeletal muscle contractility (frog), 671
  pH effects, pulmonary vascular tone, 445
  uptake, exercise, sarcoplasmic reticulum function and, 2072

Calcium-ATPase, muscle, exercise, sarcoplasmic reticulum function and, 2072
Calorimetry
indirect, glucose ingestion during exercise, osmolality effects, 76
oxygen consumption measurements, artificial ventilation, 2129
cAMP: *see* Adenosine monophosphate, cyclic
Capillaries
density, diaphragm motor units and, 620
muscle, intercostal, histochemical characteristics, 592
oxygen delivery, Krogh tissue model, 1234
transit time, during exercise, lung (horse), 862
Capillarity, muscle adaptations, exercise training in obesity, 1807
Capsaicin
airway responses to excitation of C-fibers, respiratory drive effects, 203
bronchodilation induced by, mild asthma, 856
rapid shallow breathing, pulmonary vascular congestion, 2257
reflex responses to, lower airway, 1428
viral respiratory infection, 1504
Captopril, airway responses and, neurokinins, 2504
Carbachol, epithelial vs. serosal stimulation, tracheal muscle, 2522
Carbachol aerosol, deposition, lung, asymmetric airway obstruction and (sheep), 2579
Carbohydrates
dosage, exercise performance and glycogen metabolism, 1843
feeding, substrate use and, 2066
intake, diet and exercise in emphysema, 1048
Carbon dioxide
almitrine interaction and, carotid chemoreceptors, 232
maturational and anesthetic effects, apneic threshold (lamb), 643
output, work rate effects, 547
partial pressure, arterial, dynamic exercise and, 744
pattern, upper airway, ventilatory frequency (A), 2165
pressure
arterial, in inspired gas (A), 2647
reduced, nasal obstruction and, during sleep, 970
production, cold exposure and, awake state, 32
rebreathing, functional mechanism of, 199
sensitivities
during menstrual cycle, 517
ventilatory, Read's rebreathing method (A), 1301
steady-state and rebreathing responses to, rest and light exercise (A), 1303
stimulation, intercostal muscle activity, 2087
Carbonic anhydrase II, physical exercise intensity and (A), 1306
Carbon monoxide
chronic inhalation, carotid body catecholamines and, 239
exposure, stimulation of erythropoiesis, 1383
production, cold exposure and, awake state, 32
uptake, erythrocytes, function of oxygen pressure, 2265
Carboxyhemoglobin, incremental exercise, pulse oximetry during, 300
Carboxyhemoglobinemia, carotid body, 239
Carcinoma
colorectal, chromosome deletions and gene mutations (A), 907
squamous, tumorigenicity and radiation sensitivity (A), 503
Carcinoma cell lines, epidermal and epidermoid (A), 912
Cardiac output
altitude acclimation effects, pulmonary gas exchange during exercise, 2286
exercise hyperpnea, 2006
oxygen consumption and, normobaric hypoxia, awake state, 1551
pulmonary hemodynamics and (A), 2168
respiration, during recovery from exercise, 2608
rest and exercise, aging effects (A), 1710
Cardiomyopathy
experimental
lung as source of ANF in (A), 1302
lung is source of ANF in (A), 2181
Cardiorespiratory responses, cool ambient temperature, sleep state, neonate (lamb) (A), 2645
Cardiovascular system, preexercise anticipatory response, muscles, 1855
Carnitine acyltransferase, decrease, muscle, during exercise, 2230
Carotid body
carbon monoxide and, stimulation of erythropoiesis, 1383
catecholamines, chronic carbon monoxide inhalation and, 239
dopamine, chronic ventilatory depression and, 186
glomus cells, metabolic activation by hypoxia, 484
hemorrhage, two-cytochrome metabolic model for, 60
interactions, hypoxia, acetylcholine, and dopamine in (A), 906
neural output, response to hypoxia, pregnancy and, 797
tissue oxygen measurements, second metabolic pathway for oxygen, 1578
Carotid sinus, nerve, regenerated (A), 906
Catecholamines
anemia, lactate kinetics and, during exercise, 756
caffeine mixture, cold tolerance and, 438
carotid body, chronic carbon monoxide inhalation and, 239
muscle metabolism, during treadmill sprinting, training effects, 2376
plasma, lactate threshold during exercise and, 1319
respiratory control and, during development, 1
splanchnic vascular resistance and, 786
vasodilation stimulated by, heart failure, 2026
Cathepsin G, calcium flux, inositol polyphosphate production and (A), 2185
Catheter, esophageal, pleural pressure measurement, neonate, 889
Caudate nucleus, helium-oxygen pressure effects, dopamine in striatum (hamster), 1617
$CD8^+$ suppressor T lymphocytes, continuous lines, generation of (A), 2176
Cell: *see also* specific type of cell
biomechanical environment of, 397
Cerebrospinal fluid
angiotensin II and AVP, sweating in heat stress and (monkey), 134
hyperosmolality, sweating in heat stress and (monkey), 128
ions, furosemide and, acute respiratory acidosis, 563
cGMP: *see* Guanosine monophosphate, cyclic
Chemiluminescence
detection of activated oxygen species, lung, 1912
oxygen radicals, pulmonary vascular reactivity in lung, 1903
Chemosensitivity
central, lateral pontine lesions and (lamb), 1113
ventilatory response and, airflow obstruction, sleep, 1630
Chemotactic factor, neutrophil, endothelial cell gene expression (A), 505
Chest wall
configuration, during weightlessness, 1542
displacement, during forced oscillations, 1472
distortion, pleural pressure measurement, neonate, 889
end-expiratory volume transition, infant, 2107
geometry and kinematics, ribs, 707
high-frequency oscillation, lung pressure and gas transport during, 985
pressure drop across, partial expiratory flow-volume measurements, infant, 1662
resistance
closed-chest during flow interruption, 488
determined by expiratory flow interruption, 2276
viscoelastic behavior, determined by flow interruption, 2219
Chloride channels, purification, kidney and trachea (A), 2183
Chlormadinone acetate, ventilatory response and, hypoxia, 1754
Choke point, airway pressure-volume curve, flow interruption during forced expiration, 2631
Cholinergic responses, acetylcholinesterase activity, airway contractile properties and (swine), 174
Chromatography, reversible changes, endothelial permeability, 2032
Chromosomes X and 14, translocation breakpoint (A), 1716
Cimetidine, hyperoxic lung injury and (lamb), 2586
Circulation: *see also* Blood flow; Microcirculation
airway mucosa, 917
bronchial, metabolic and pharmacokinetic activity (sheep), 1041
pulmonary
ACh effects, 1495
air emboli in, 1898
furosemide effects on fluid filtration (lamb), 1990
lung granulomatous disease, 1717

noradrenergic prostacyclin synthesis, 330
occlusion pressure vs. micropipette pressures, 1277
partial compression of ductus arteriosus, fetus (A), 2165
splanchnic, angiotensin blockade effects, 786
test functions, computerized respiratory system, 1687
tracheal, antigen effects on (sheep), 1256
Clearance
mucociliary, pyocyanin and 1-hydroxyphenazine, 316
pulmonary
adult never-smokers, 422
technetium-99m-DTPA, exercise effects, 2055
Clonidine, dihydralazine and, effects on ANF and cGMP, 938
Cold
exposure, hypoxia effects on metabolic rate, awake state, 32
stress responses, eumenorrheic and amenorrheic women, 282
tolerance, ephedrine-caffeine mixture and, 438
Collagen, distribution, lung alveolar parenchyma, 1941
Colony-stimulating factors, monocyte factor against, enhancement of (A), 2188
Compliance
airway, flow interruption during forced expiration, 2631
lung, tracheal gland secretion, reflex increase in, 682
respiratory system
changes in time constants, infancy and childhood, 2112
lung volume effects, newborn, 1192
vascular, ACh effects, pulmonary circulation, 1495
Compression technique, expiratory flow-volume curves, flow limitations in, infant, 1662
Computerized tomography
muscle contrasts, male and female bodybuilders, 24
parenchymal expansion, variability of, 226
rebreathing of soluble gases and, lung weight from, 166
tracheal, during forced expiration, 1032
Congenital central hypoventilation syndrome, hypoxic and hypercapnic ventilatory response, awake children (A), 2647
Constant flow inflation, flow interruption, viscoelastic behavior determined by, 2219
Coronary reserve, exercise training effects, 1140
Corticosteroids
antenatal, lung function, premature newborn, 1377
treatment, diaphragm atrophy and weakness and, 2420
Corticosterone
differential response, exercise training and, 804
muscle malonyl-CoA decrease and, during exercise, 2230
Cortisone, treatment, diaphragm atrophy and weakness and, 2420
Coupling
excitation-contraction, skinned muscle fibers (A), 2167
locomotor-respiratory, decerebration and, 110
CPAP: *see* Pressure, continuous positive airway
Cryoglobulins, IgG3 is major source of (A), 2176
CT: *see* Computerized tomography
Cyanide, carbon dioxide interaction and, carotid chemoreceptors, 232
Cyclooxygenase
eosinophil accumulation, tracheal lumen, 959
products of arachidonic acid, pulmonary edema, 846
response to acetylcholine and, pulmonary vascular bed, 1388
Cyclooxygenase inhibitors, metabolism, endotoxic shock (pig), 1950
Cyclophosphamide, injury induced by, modulation by glutathione repletion, 2316
Cyclosporin A
lymphopoiesis and (A), 2182
mitogen-induced gene transcription and (A), 2181
Cystic fibrosis
airway epithelia in, chloride channel regulation by protein kinase C (A), 2183
antigen, inhibitor of protein kinases (A), 1309
nasal epithelial cells from, increased sulfation of glyconjugates by (A), 2178
Cytochalasin D, reversible changes, endothelial permeability, 2032
Cytochrome
low-affinity, carotid body after hemorrhage, 60
low oxygen affinity, denervated carotid body, 1578
Cytochrome b_5 reductase, skeletal muscle, strength training effects, 123
Cytochrome oxidase
muscle activity, ovariectomy effects, 2060
oxidation/reduction state, repetitive contractions, 2158
Cytochrome *P*-450, hyperoxic lung injury, cimetidine reduction of (lamb), 2586
Cytokine, administration, induction of (A), 503
Cytomegalovirus DNA, enzymatic amplification, primer-mediated (A), 908
Cytometry, flow, endothelial cell subpopulations, 1585

D

Decerebration, during locomotion, respiratory and stepping rhythms, 110
Decompression, outcome, inert gas effects, 1354
Deconditioning, isokinetic training and, work capacity during 30 days bed rest, 1820
Dehydration, interstitial pressure and, lung, 839
Dendritic cells, leukocyte reaction initiated by, macrophage factor (A), 914
2-Deoxyglucose, hypoxia, glucose cell metabolism and, 484
Deoxyribonucleic acid
cruciform, specific recognition (A), 499
induction of anti-double stranded (A), 501
Development: *see also* Growth; Maturation
respiratory control, neurochemicals and, 1
respiratory system, lung water measurement, fetus, 1286
tracheal mucociliary system and, neonate (sheep), 824
Dextran, fluid conductivity and, pulmonary interstitium, 606
Diabetes
management, exercise in (A), 2167
non-insulin-dependent, glucose tolerance, exercise effects (A), 2172
Diabetes mellitus
insulin-dependent, fuel homeostasis and glucose transport in (A), 2175
type I, antibodies against ganglioside G_{T3} in (A), 2181
Diacylglycerol, leukocyte adherence and, 556
Diaphragm
activation, twitch tension relations, electrical stimulation (A), 2167
atrophy, cortisone treatment and, 2420
contractility, phrenic nerve stimulation, awake state, 1311
displacement, Respitrace derived, 694
electromyography, multiple electrode array, 1525
endurance, theophylline effects, 1655
extrapulmonary volume displacements, 1785
fatigue
electrical stimulation and, 210
hypoxic hypercapnic acidosis effects (A), 1707
ischemic, respiratory muscle activation and, 720
motor units, oxidative capacity and capillary density, 620
naloxone response, inspiratory flow-resistive load, 1747
plate electrode stimulation (hamster), 1341
regional function, 655
respiratory and stepping rhythms, during locomotion, decerebration and, 110
respiratory motor output, stimulation of vagal C-fiber effects, 2249
response, poikilocapnic hypoxia, 2303
sonomicrometric regional shortening, after thoracic surgery, awake state (sheep), 2357
thickness-volume relations, 1560
vasodilation, pulmonary C-fiber stimulation (A), 904
Diastolic gradient, pulmonary, lung granulomatous disease, 1717
Dibutyryl adenosine monophosphate, cyclic
amelioration, pulmonary edema caused by phosgene, 2542
contractile agonist-specific relaxation, trachea, 181
reversible changes, endothelial permeability, 2032
Dihydralazine, clonidine and, effects on ANF and cGMP, 938
Dilution index format, single-breath tests, alveolar plateau of, 1699
Dimethylthiourea
blood sulfhydryl levels and, during hyperoxia, 1070

Dimethylthiourea (*continued*)
myeloperoxidase pathway and, neutrophils, 1056
pulmonary arterial remodeling, ventricular hypertrophy and (A), 2646
Dipyridamole, hypoxic ventilatory depression and, 541
Diuresis, ANF protection, right ventricular overload, 1606
Diuretics, lung fluid filtration and, microvascular injury from air emboli (lamb), 1990
Diving, decompression outcome, inert gas effects, 1354
Domperidone, chronic ventilatory depression and, 186
Dopamine
carbon dioxide interaction and, carotid chemoreceptors, 232
carotid body, chronic carbon monoxide inhalation and, 239
chronic ventilatory depression and, 186
helium-oxygen pressure effects, striatum (hamster), 1617
pathways, hypoxic depression, neonate, 1271
ventilation with, in exercise, 2438
Dose-response relations, airway and parenchyma, 1220
Dyspnoea, measurement, during exercise (A), 498

E

ECG: *see* Echocardiography
Echocardiography, BCG and, blood pressure, embryo (chick), 478
Edema
pulmonary
acrolein smoke exposure, bronchial artery ligation, 1001
alveolar oxygen during perfusion and, 528
cimetidine reduction of (lamb), 2586
endogenous arachidonic acid, 846
furosemide effects on fluid filtration (lamb), 1990
high-altitude, blood coagulation, 1336
high-altitude, hemodynamic responses, 1982
intrapulmonary shunt in, 833
liquid entry, airway level of, 2234
neurogenic, elevated vascular effects, 305
oleic acid infusion, model (A), 2168
permeability to protein and, 1185
phosgene, dibutyryl cAMP amelioration of, 2542
phospholipase A_2, 2495
positive-pressure ventilation in, 817
prevention by pentoxicylline, 2432
protein clearance from air spaces, awake state (sheep), 1887
protein kinase inhibitor prevention of (A), 905
protein kinase inhibitor prevention of (A), 1308
rapid shallow breathing and, 2257
transvascular balance of forces, 628
EEG: *see* Electroencephalography
Eicosanoids
heparin-protamine reactions and, pulmonary hypertension (sheep), 1463
lung injury and, 811
lymph, superoxide anion release, lung (sheep), 2481
pulmonary responses, phospholipase A_2, 2495
Elastance
respiratory
anesthetized kyphoscoliotics, 1024
flow and volume dependence, 1013
static and dynamic
paralyzed and anesthestized subjects, 2556
viscoelastic behavior determined by flow interruption, 2219
Elasticity
imperfect, lung tissue, 2408
lung, technetium-99m-DTPA clearance, exercise and, 2055
Elastic moduli, postnatal development, lung (piglet), 1422
Elastin, distribution, lung alveolar parenchyma, 1941
Electrical stimulation, metabolic alterations during, diaphragm, 210
Electrocardiography, arterial occlusion controlled by, lung lobe, 2205
Electrode
array, diaphragmatic electromyography, 1525
implantable, selective recording, intercostal muscles, 2125
Electroencephalography, arousal and sleep, postural baroreflex stimuli and, 2369
Electromyography
diaphragmatic
multiple electrode array, 1525
plate electrode stimulation (hamster), 1341
intercostal muscle activity, 2087
regional diaphragmatic shortening, after thoracic surgery, awake state (sheep), 2357
selective recording, intercostal muscles, 2125
surface power spectrum, intramuscular pH and, muscle during exercise, 1245
Emboli
air, pulmonary circulation, 1898
size, extravascular lung water and, 663
Embryo, patterns of metabolism in, reptile (A), 1712
EMG: *see* Electromyography
Emphysema, diet and exercise in, 1048
Endometrial stromal cells, interferon/interleukin, cytokine-induced production of (A), 2187
Endopeptidase
neutral
nasal gland secretion and (ferret), 2553
viral respiratory infection, 1504
Endoperoxide, product levels, modulation by glutathione repletion, 2316
Endothelial cells
prostacyclin synthesis, HETE's and (A), 1715
pulmonary arterial and aortic, angiotensin receptors in (A), 1309
thrombin-treated, platelet adherence to (A), 2651
volume, cycle, and radiosensitivity, 1585
Endothelial-derived relaxing factor, vascular resistance and compliance and, pulmonary circulation, 1495
Endothelial monolayers, permeability, 1997
Endothelium, biomechanical environment of cell, 397
Endothelium-derived relaxing factor, hypoxia stimulation of (A), 2185
Endotoxemia
increased circulating interferon/interleukin 6 (A), 909
oxygen metabolism in, systemic and mesenteric (pig), 1950
recurrent, lung injury and lipid peroxidation relations (A), 1302
Endotoxin
intravenous, blunted febrile response to, starvation and, 963
suppression, blood-derived macrophages (A), 914
Endotracheal tube, gas injection, air entrainment effects on airway pressure, 771
Endurance: *see* Exercise
Energy
balance, exercise-rest cycle effects (A), 906
cost, training for jungle warfare, 14
expenditure, doubly labeled water test, 1922
metabolism
microgravity and, astronauts, 2191
ovariectomy effects, exercising muscle, 2060
submaximal exercise, 324
radio frequency, recovery from mild hypothermia and, 1208
release, aerobic and anaerobic, bicycle exercise, 1881
thermal regulation and, bed rest and spaceflight, 507
Enkephalinase, viral respiratory infection, 1504
Enkephalins, cardiac output and blood flow, awake state (A), 1712
Enzymes: *see also* specific enzyme
activities, muscle fibers, heavy-resistance trained athletes, 83
degradative, airway response to neurokinins and, 2504
Eosinophilia
accumulation, prostaglandin D_2 effects, trachea, 959
degradation, IgA-induced (A), 907
helminth-induced, antibody to IL-5 inhibition of (A), 2650
survival, endothelial cell effects (A), 2183
tissue, airway hyperresponsiveness to antigen challenge (guinea pig), 1133
Eosinophil peroxidase, molecular cloning of (A), 1310
Ephedrine, caffeine mixture, cold tolerance and, 438
Epidermal growth factor, receptors: *see* Receptors
Epinephrine
circulating, metabolic response to, rest and exercise (A), 496
hyperglycemia induced by, tissue glucose utilization during, 1770
muscle malonyl-CoA decrease and, during exercise, 2230
plasma, lactate threshold during exercise and, 1319
radio frequency energy and, rewarming from mild hypothermia, 1208
Epithelial cells, alveolar, tight monolayers (A), 499

Epithelial-derived relaxant factor, calcium and temperature dependence, trachealis muscle tension, 713
Erythrocytes
carbon monoxide uptake, function of oxygen pressure, 2265
deformability, pulmonary hemodynamics and, 2593
oxygen transfer kinetics (turtle) (A), 907
plasma and, amino acid exchange, 2383
sickle, deformability of, oxygen affinity effects (A), 1708
sulfhydryl levels, during hyperoxia, 1070
transit time, zymosan-activated plasma changes, 88
Erythropoiesis, stimulation of, chronic carbon monoxide exposure, 1383
Erythropoietin, production, oxygen supply to kidneys (A), 2171
Estrous cycle, prolactin release, exercise training and, 804
Ethacizin, blockade, calcium channels (A), 2649
Exercise
adenine nucleotide degradation, skeletal muscle, 116
β-adrenergic responses to, sedentary and active subjects, 103
aged trained subjects, sodium-potassium pump in skeletal muscle, 2491
aging effects, physical performance (A), 496
altitude, renin secretion during β-blockade, 141
anticipatory response, muscle blood flow, 1855
asthma induced by, lung periphery, 2571
bicycle
energy release during, 1881
upright, vascular resistance changes after (A), 1706
blood gas measurement during, temperature correction in (horse), 879
bodybuilding
enzyme activities in muscle fibers, 83
male and female, contrasts in muscle, 24
cold stress responses, sex differences, 282
conductive and convective heat flow in, cold water, 2473
cycle ergometry
β-adrenergic blockade effects on response, 103
maximal oxygen uptake during, aging and (A), 1705
dynamic
cerebral blood flow during, 744
recovery of short-term power after, 677
endurance
anemia and muscle oxidative capacity in, 765
sustained maximal ventilation after, 1759
ventilatory threshold following, children (A), 2170
exertion
induced alkalosis effects, 1862
iron deficiency and, gluconeogenesis in hepatocytes, 1868
perception of, induced alkalosis effects, 1862
sympathetic activity related to fatigue sensation, 980
feeding before, substrate use with, 2066
fibrinolytic response to, β-blocker effects (A), 2167
food restriction and, skeletal muscle lipid peroxidation, aging, 69
force deficit, onset of muscle hypertrophy, 2600
glucose, fructose, and sucrose ingestion effects (A), 1711
glucose ingestion during, osmolality effects, 76
high-altitude acclimatization, muscle lactate release and, 1456
high-intensity, altered sarcoplasmic reticulum function, 2072
hormonal and metabolic responses to, ventromedial hypothalamic regulation (A), 1306
hypercapnia induced by (horse), 1958
incremental
lactate threshold, 885
pulse oximetry during, 300
intensity, glucose tolerance and, training effects, 39
intramuscular pH in muscle during, EMG, 1245
isokinetic training, work capacity during 30 days bed rest with, 1820
isometric, sympathetic discharge, muscle mass and, 1801
lactate production, anemia and, 756
lactate threshold, plasma catecholamines and, 1319
leg extension, maximal voluntary force of (A), 2173
locomotion
force platform, treadmill-mounted, 1692
respiratory and stepping rhythms during, 110
malonyl-CoA decrease, muscle, during exercise, 2230
maximal, hypoxic ventilatory responses during, 1119
maximal oxygen consumption, tissue diffusion limitation, 291
menstrual cycle, fluid regulation and, 736
muscle, ovariectomy effects on energy metabolism, 2060
myosin light chain phosphorylation and, cardiac, 2447
one-leg, control of vascular resistance during, 1791
onset of, mixed venous blood gas changes after, 1106
oxygen transport during (horse), 862, 871
partial curarization, autonomic blockade and cardiovascular response effects (A), 1710
performance, carbohydrate dosage effects, 1843
plasma ANF and, 2427
pulmonary edema-susceptible subjects, hemodynamic responses, 1982
rapidly-incremental, ventilatory control of isocapnic buffering region (A), 2175
reflex pressor response, decreasing muscle pH, 256
respiration during recovery from, trapping of femoral blood flow and, 2608
respiratory inertance (pony), 534
rest to submaximal, oxygen deficit and (A), 2648
rowing and cycling, ventilatory response to, 264
running
blood pressure changes during, 52
distance, females (A), 1707
performance, mathematical model, 453
strength training, aging muscles, 1401, 1409
submaximal
emphysema and malnutrition, 1048
energy and thermal regulation, 507
energy metabolism during, 324
technetium-99m-DTPA clearance, pulmonary, 2055
tolerance, heat, salt intake effects (A), 1708
training
aerobic, lower body negative pressure responses, 894
age and, lipid metabolism, 1638
coronary transport reserve, 1140
differential prolactin response and, 804
endurance, plasma lipid alterations (A), 1711
heavy-resistance athletes, enzyme activities in muscle fibers, 83
interval, draft-loaded, muscle (horse), 570
jungle warfare, energy cost of, 14
muscle adaptations to, obesity and, 1807
muscle metabolism during treadmill sprinting, 2376
myocardial creatine kinase and (A), 2171
protocols, microgravity, astronauts, 2191
strength, NADH shuttle enzymes and, 123
treadmill
force platform, 1692
maximal, variability of responses, 160
ventilatory control during, peripheral chemoreceptor stimulation, 2438
veteran athletes, echocardiographic comparison (A), 2649
voluntary, ventilatory and cardiodynamic responses in hyperpnea, 2006
weight-bearing, bone density determinants in, 1100
work overload, plantaris, weight bearing effects, 636
work rate
oxygen uptake and heart rate affected by, 2535
ventilatory and gas exchange kinetics and, 547
Exertion: *see* Exercise
Exhalation, flow distribution during, airway, 1649
Expiration: *see* Respiration
Expiratory pattern generator, functional mechanism of, 199

F

Fasting, blunted febrile response in, intravenous endotoxin, 963
Fat
body, percent, bioelectric impedance, 1643
intake, diet and exercise in emphysema, 1048

Fatigue
  diaphragm
    metabolic alterations during, 210
    motor units, 620
  inspiratory muscle
    maximal relaxation rates (A), 1304
  muscle
    aging, strength training and, 1401
    metabolic changes and, 648
  muscle activation during, muscle, 720
  respiratory muscle, endurance exercise in athletes, 1759
  sensation, sympathetic nerve activity and, 980
  wrist flexor muscles, measured with MRS, 926
Fatty acids
  deficiency, oleic acid-induced pulmonary injury and, 811
  free, availability, temperature regulation and, 2466
  oxidation, muscle, during exercise, 2230
Feedback, tubuloglomerular, signal transmission, transport-coupling hypothesis (A), 2648
Feeding
  diet, exercise and, emphysema, 1048
  energy balance and, training for jungle warfare, 14
  food restriction, exercise and, muscle lipid peroxidation, aging, 69
  preexercise, substrate use and, 2066
Fenoldopam, salt-perfused lungs and, 1076
Fetus: *see also* Pregnancy
  cardiorespiratory function (A) (llama), 903
  central chemosensitivity, lateral pontine lesions and (lamb), 1113
  lung liquid volume, during oligohydramnios (sheep), 2401
  pulmonary vasodilation, bradykinin effects (lamb), 1512
Fever
  malaria, oxygen consumption and brown fat activity with, 1020
  pyrogen, immunoadjuvant effects, 1734
  response to pyrogen, enhancement in OVLT region, 1740
Fibroblasts
  diploid, cell cycle regulation of (A), 2183
  gene expression in, neutrophil chemotactic factor (A), 2186
  IGF binding proteins from (A), 500
  skin, collagen gene expression by (A), 504
  synovial, plasminogen activator and prostaglandin levels in (A), 2652
Fibronectin, receptors, molecular cloning of (A), 1307
Filtration, capillary, lung lobes, 628
Flow
  distribution, during inhalation and exhalation, airway, 1649
  interruption, collateral pathways of lungs after, 1213
  limitations, partial expiratory flow-volume curves, infant, 1662
  oscillatory, model bifurcation, 147
Flow-volume relations
  lobar emptying rates, compensatory lung growth and, 1164
  maximal and partial, thoracic gas compression effects, 780
  partial expiratory, flow limitations in, infant, 1662
Fluid
  amniotic: *see* Amniotic fluid
  cerebrospinal: *see* Cerebrospinal fluid
  extracellular, pH dynamics within ventrolateral medulla, 193
  filtration, lung, furosemide effects (lamb), 1990
  lung, balance, airway level of, 2234
  pleural, turnover, comparative features, 1967
  regulation, exercise and menstrual cycle, 736
  volume: *see* Volume
Fluorodeoxyglucose, positron-emission, glucose uptake in hindlimb, 1569
Follicular phase, menstrual cycle, carbon dioxide changes during, 517
N-Formyl-L-methionyl-L-leucyl-L-phenylalanine, blood cell accumulation and, lung, 1479
Forssman shock: *see* Shock
Frequency-force relations, aminophylline, skeletal muscle contractility and (frog), 671
Furosemide
  acute respiratory acidosis and, 563
  lung fluid filtration and, lung microvascular injury (lamb), 1990
FUT-175, pulmonary hypertension, heparin-protamine reactions (sheep), 1463

G

Ganglion, nodose, serotonin excitation and, 584
Gas
  blood
    measurement, exercise (horse), 879
    mixed venous, changes with exercise, 1106
  bubbling, platelets and, 1250
  compression, thoracic, flow-volume maneuvers, 780
  exchange
    during constant-flow ventilation, 1489
    exercise, dietary fat and carbohydrates in (A), 1712
    gills with parallel inhomogeneities (fish) (A), 1304
    high-frequency airway and chest wall oscillations, 985
    high-frequency ventilation, lung pressure swings during, 993
    lung morphometry, 2512
    precapillary, pulmonary circulation, 1898
    pulmonary, β-blockade, exercise during, 103
    pulmonary, during exercise, altitude acclimation effects, 2286
    pulmonary, exercise work rate effects, 2535
    pulmonary, oxygen uptake by, exercise (horse), 862
    regional alveolar hypoxia effects, 730
    work rate effects, 547
  flow, bronchopleural fistula, 1591
  inert
    decompression outcome and, 1354
    permeation, skin, model, 1670
  injection, endotracheal, airway pressure during, 771
  mixing, variable parenchymal expansion, 226
  respiratory, viscosity of, 472
  soluble, rebreathing, CT and, lung weight measured from, 166
  tracer, sloping alveolar plateau of, venous blood (A), 1305
  transfer, lungs, red cell suspensions (A), 2168
  transpulmonary, diffusion-limited gas mixing, lung (A), 1306
Gastric acid, secretion, regulation, model (A), 907
Gastric emptying, exercise, carbohydrates and (A), 1710
Gastrocnemius muscle, medial, periodic weight support effects, 945
Gene expression, recombinant, endothelial cells of arterial wall (A), 2184
Genetic regulation, autosomal recessive inheritance, airway hyperreactivity to serotonin, 1125
Genioglossus muscle, response, poikilocapnic hypoxia, 2303
Glomus cells, carotid body, metabolic activation by hypoxia, 484
Glottis, narrowing, obstructive sleep apnea and, 2565
Glucocorticoids, deterrence, by exercise, muscle, 2311
Gluconeogenesis, iron deficiency effects, hepatocytes, 1868
Glucose
  blood
    carbohydrate dosage effects, exercise performance, 1843
    during exercise, skeletal muscle, 116
  ingestion, during exercise, osmolality effects, 76
  insulin action and, one-legged immobilization effects, thigh muscle, 19
  kinetics, sampling schedules for (A), 1706
  tolerance, exercise intensity and, training effects, 39
  uptake, hindlimb, positron-emission fluorodeoxyglucose, 1569
  utilization, tissue, during hyperglycemia, 1770
Glutaraldehyde, pulmonary, reduced erythrocyte deformability and, 2593
Glutathione
  lung injury, blood sulfhydryl levels and, 1070
  pathway, neutrophil, dimethylthiourea effects, 1056
  repletion, modulation of endoperoxide product levels, 2316
Gluteus medius muscle, interval training effects, draft-loaded (horse), 570
Glycerol-3-phosphate dehydrogenase, skeletal muscle, strength training effects, 123
α-Glycerophosphate, skeletal muscle, strength training effects, 123
α-Glycerophosphate dehydrogenase, periodic weight support and, gastrocnemius muscle fibers in suspension, 945
Glycogen
  breakdown, skeletal muscle, 2243
  concentrations, temperature regulation in cold water and, 2466
  metabolism, carbohydrate dosage effects, 1843
Glycogenolysis, regulation, skeletal muscle, 2243

Graft-versus-host disease, pneumopathies of (A), 2652
Granulocyte-macrophage colony-stimulating factor, cytokine secretion and, polymorphonuclear leukocytes (A), 913
Granulocytes
albumin accumulation and, lung, 1479
polymorphonuclear, endothelial fibronectin synthesis modulation (A), 2184
Granuloma, formation, artificial microparticles (A), 2653
Growth: *see also* Development; Maturation
fast, pulmonary hemodynamic effects (chicken) (A), 1712
lung
changes in time constants, infancy and childhood, 2112
compensatory, after pneumonectomy (ferret), 1418
maximal lobar emptying rates and, 1164
postnatal, elastic moduli during (piglet), 1422
Growth factors
differential response to (A), 1308
endothelial cell, cloning and expression (A), 1308
G suit, inflation, normovolemia and, 339
Guanosine monophosphate, cyclic, clonidine and dihydralazine effects, 938

H

Halothane
maturation and, apneic threshold (lamb), 643
paralyzed subjects, respiratory mechanics in, 2556
Heart
denervated, respiratory sinus rhythm in, 1447
disease, risk of, age and exercise training effects, 1638
failure, isoproterenol-stimulated vasodilation in, 2026
growth, chronic hypercapnia and, 311
hypertrophy, cardiomegaly and, involution of (A), 1706
myosin light chain phosphorylation, exercise effects, 2447
response to isoproterenol, hypoxia-induced decrease in, 523
swinging, during pericardial effusion (A), 2172
work, hyperoxia and, awake state, 1551
Heart atria, excitation, ECG and BCG, embryo (chick), 478
Heart-lung interactions, denervated heart, 1447
Heart-lung transplantation
breathing
hypercapnia and hypoxia after (A), 2173
sleep and wakefulness (A), 2173
lung rejection, bronchial hyperresponsiveness in (A), 2168
posture effects, ventilatory compensation for (A), 2169
Heart rate
ECG and BCG, embryo (chick), 478
maximal, treadmill exercise, 160
myosin light chain phosphorylation, exercise effects, 2447
oxygen uptake and, exercise work rate effects, 2535
postural baroreflex stimuli effects, EEG arousal and sleep, 2369
response to isoproterenol, hypoxia-induced decrease in, 523
Heart ventricles, left, filling and emptying, negative intrathoracic pressure decrease (A), 2172
Heart ventricles, right, overload, ANF protection, 1606, 1612
Heat
acclimation, body temperature changes, 2154
conductive and convective flow, exercise in cold water, 2473
stress
sweating in, CSF angiotensin II and AVP effects (monkey), 134
sweating in, CSF hyperosmolality (monkey), 128
Helium, density dependence, respiratory system impedances, 2323
Hemidiaphragm, left, perfused and innervated preparation, 2141
DL-Hemocysteic acid, cardiorespiratory effects, caudal ventrolateral medulla (A), 493
Hemodialysis, chronic, anemia and exercise capacity in (A), 496
Hemoglobin
oxygen affinity, tissue hypoxia, 2163
oxygen binding in, *Xenopus laevis* (A), 1709
saturation
during maximal exercise, 1119
noninvasive determination (A), 1302
Hemorrhage, carotid body, two-cytochrome metabolic model for, 60
Heparin-protamine reactions
low-dose, experimental autoimmune disease suppression (A), 503
pulmonary hypertensions, FUT-175 effects (sheep), 1463
Hepatitis B virus infection, peripheral blood mononuclear cells in (A), 2182
Hepatocytes, gluconeogenesis in, iron deficiency effects, 1868
Hexamethonium, nonadrenergic bronchodilation, adult and young, 1764
High-pressure nervous syndrome, dopamine level and, striatum (hamster), 1617
Histamine
bronchial challenge to, respiratory resistance and reactance to (A), 498
challenge, airway response to, asymptomatic asthmatics, 2622
intracellular messenger, mediating platelet aggregation (A), 915
microvascular mechanics, lung lobe, 2205
occlusion pressure, pulmonary circulation, 1277
pulmonary vascular resistance, compliance and, 2166
responsiveness, airway and parenchyma comparison, 1220
secretion, basophils, comparative effects (A), 2176
venular responses, hypoxia and anoxia, 2147
Histamine-releasing factor, mononuclear cell, purification (A), 907
Hormones: *see also* specific hormone
menstrual status, aldosterone exercise responses and, 736
Human immunodeficiency virus
antibody enhancement of, Fc receptor mediation of (A), 2182
antigens, lymphocyte proliferative response (A), 912
chronically infected cells, interferon-α and AZT effects (A), 2185
common epitope in (A), 910
culture infections, monoclonal antibody-ricin A chain conjugates (A), 2185
infection, helper T cell clones (A), 1715
reduced sensitivity to zidovudine, prolonged therapy (A), 912
reservoir for, peripheral blood (A), 2653
syncytium formation induced by, leukocyte adhesion receptor (A), 1715
transmembrane protein in, IgG subclass responses to (A), 2178
Hyaluronidase, fluid conductivity and, pulmonary interstitium, 606
Hydrochloric acid, muscle pH, reflex pressor response to, 256
Hydrogen ions
concentration, pulmonary vascular tone and arachidonic acid metabolism, 445
ileal intramucosal, endotoxic shock (pig), 1950
1-Hydroxyphenazine, mucus velocity and, trachea, 316
5-Hydroxytryptamine: *see also* Serotonin
bronchoconstriction induced by, adult and young, 1764
venular responses, hypoxia and anoxia, 2147
Hyoid muscle, length, airway occlusion effects, 2296
Hypercapnia
chronic, respiratory adaptation to, newborn, 311
exercise-induced (horse), 1958
expiratory intercostal activity, triangularis sterni, 1518
extracellular pH dynamics, ventrolateral medulla, 193
furosemide and CSF ions, acute respiratory acidosis, 563
hypoxia and, contrasting effects, ventilation and sympathetic activity, 2101
hypoxic interaction, breathing during sleep and, 1198
intracellular pH and, brain, ^{31}P-NMR, 2527
local or systemic, response of bronchial vasculature to, 2639
muscle activation and, respiratory, 1776
respiratory control, acute hyperbaric oxygenation effects, 2351
ventilatory response, airflow obstruction during sleep, 1630
Hyperglycemia, epinephrine-induced, tissue glucose utilization during, 1770
Hypergravity, acclimation, thermoregulation in, 383
Hyperinsulinemia, arterial blood pressure and, 2335
Hyperkalemia, ventilatory response, lowering of potassium with dextrose and insulin (A), 2172
Hypermetabolism, hypoxia and, hemodynamics during, polycythemia and, 96
Hyperosmolality, CSF, sweating in heat stress and (monkey), 128

Hyperoxia
lung injury caused by, neonate (piglet), 1007
pulmonary, cimetidine reduction of (lamb), 2586
sulfhydryl level increase during, blood, 1070
sustained, increased chemoreceptor output, 1157
ventilatory response to, aminophylline effects, 1150
Hyperoxygenation, oxygen consumption, hemodynamics and, awake state, 1551
Hyperpnea
exercise
mixed venous blood gas changes after, 1106
ventilatory and cardiodynamic responses, 2006
plasma ANF and, 2427
Hypertension
blood pressure changes, during exercise, 52
chronic blockade of ANP in (A), 2169
chronic intrauterine pulmonary, circulation after (A), 1705
pulmonary
FUT-175 effects (sheep), 1463
monocrotaline-induced, right ventricular performance after (A), 1307
spontaneous, vascular smooth muscle cells (A), 499
thromboembolic pulmonary, mechanism of hypoxemia in (A), 1303
thromboxane-mediated, lung (A), 2174
Hypertrophy
compensatory
force deficit during onset of, muscle, 2600
plantaris, weight bearing effects, 636
muscle
heavy-resistance trained athletes, 83
transitional motor units in, 2049
Hyperventilation
exercise, technetium-99m-DTPA clearance, 2055
hypoxia and, lung growth with (A), 1707
lung injury, neonate (piglet), 1007
Hypobaria, pulmonary edema-susceptible subjects, hemodynamic responses, 1982
Hypocapnia
bronchoconstriction induced by, tachykinin effects, 2454
expiratory intercostal activity, triangularis sterni, 1518
ventilation and, sympathetic nerve response to hypoxia, 2095
Hypopnea, nasal obstruction, sleep apnea and, 970
Hypotension
carotid body, two-cytochrome metabolic model for, 60
oxygen delivery and uptake, Krogh tissue model, 1234
Hypothalamus, temperature, heat acclimation schedules and, 2154
Hypothermia
cold water, free fatty acid availability and, 2466
ephedrine-caffeine mixture, cold tolerance and, 438
intracellular pH and, brain, ^{31}P-NMR, 2527
mild, recovery from, radio frequency energy and, 1208
Hypoxemia
exercise-induced (horse), 1958
incremental exercise, pulse oximetry during, 300
long-term
fetal response (sheep) (A), 1709
maternal response (sheep) (A), 1709
oxygen pressure during, muscle, 1092
status asthmaticus, mechanical ventilation and (A), 497
Hypoxia
acclimatization, muscle lactate release and, 1456
alveolar, gas exchange and, 730
ANF protection, right ventricular overload, 1606, 1612
breathing during, sleep, 1198
central chemosensitivity, lateral pontine lesions and (lamb), 1113
chronic
skeletal muscle capillary geometry (A), 2172
stimulation of erythropoiesis, 1383
depression, dopaminergic pathway in, neonate, 1271
hyperbaric, blood oxygen measurement, Operation Everest II, 2135
hypercapnia and, contrasting effects, ventilation and sympathetic activity, 2101
hypermetabolism and, hemodynamics during, polycythemia and, 96
isoproterenol infusion and, cardiac response, 523
local or systemic, response of bronchial vasculature to, 2639
maximal oxygen consumption, tissue diffusion limitation, 291
metabolic activation, glomus cells of carotid body, 484
metabolic rate and, during cold exposure, awake state, 32
muscle activation and, respiratory, 1776
neural output response to, pregnancy and, 797
normobaric, oxygen consumption and cardiac output, awake state, 1551
oxygen delivery and uptake, Krogh tissue model, 1234
period breathing induced by, newborn (lamb), 1226
poikilocapnic, diaphragm, genioglossus, and triangularis sterni responses, 2303
pulmonary edema-susceptible subjects, hemodynamic responses, 1982
pulmonary gas exchange and, during exercise, 2286
respiratory control, acute hyperbaric oxygenation effects, 2351
sustained, increased chemoreceptor output, 1157
sympathetic nerve response to, ventilation and hypocapnia effects, 2095
systemic
cardiovascular changes induced by (A), 2647
graded levels, cardiovascular response to (A), 905
thermal polypnea and, awake state, 578
tissue, hemoglobin-oxygen affinity, 2163
ventilation with, in exercise, 2438
ventilatory depression, adenosine role in, 541
ventilatory effects, dopamine and, 186
ventilatory response
airflow obstruction during sleep, 1630
aminophylline effects, 1150
during maximal exercise, 1119
synthetic progestin effects, 1754
venule response, pulmonary, 2147
Hysteresis
airway, thoracic gas compression, 780
imperfect elasticity, lung tissue, 2408
step-response stereology, lung surface-to-volume ratio, 1873
tracheal, sleep apnea, 1349

I

Ibuprofen, oxygen metabolism and, endotoxemia (pig), 1950
IGF: *see* Insulin-like growth factor
IL-1: *see* Interleukin 1
Immersion, pulmonary volume in, water temperature effects (A), 903
Immune complex, IgA nephropathy, model (A), 2188
Immunoadjuvants, pyrogen and, febrile response to, 1734
Impedance
bioelectric, sensitivity, body composition, 1643
respiratory, corrected for upper airway shunt, 1973
respiratory transfer, flow and volume dependence of respiratory mechanical properties, 2212
Indicator-dilution technique
extravascular lung water, emboli size effects, 663
reversible changes, endothelial permeability, 2032
Indomethacin
allergen effects and, tracheal circulation (sheep), 1256
synthesis, lung, norepinephrine induction of, 330
Infant: *see also* Neonate; Newborn
end-expiratory volume, dynamically maintained to relaxed, 2107
partial expiratory flow-volume curves, flow limitations in, 1662
premature, steroid and surfactant effects on lung function, 1377
sleeping, upper airway negative pressure reflex effects, 749
Infection, malaria, oxygen consumption and brown fat activity with, 1020
Inhalation, flow distribution during, airway, 1649
Inosine monophosphate, formation, muscle, during exercise (A), 2173
Inspiration: *see* Respiration
Insulin
action, after one-legged immobilization, 19
exogenous, arterial blood pressure measurements and, 2335
muscle malonyl-CoA decrease and, during exercise, 2230
sensitivity, exercise intensity and, training effects, 39
Interferon-α, conserved region of, peptide representative of (A), 2176
Interferon-γ, cell surface receptor expression and, lung fibroblasts (A), 1301
Interleukin, different combinations, T cell leukemic cell lines (A), 1309

Interleukin 1
affinity binding sites, human cell lines (A), 2650
endothelial cells treated with, production of a chemotaxis inhibitor (A), 915
fibroblast extracellular matrix (A), 2185
immunoreactive β-endorphin, blood mononuclear cells (A), 911
induction capacity, defined lipopolysaccharide partial structure (A), 2184
membrane, lectin-like interaction (A), 2650
release, alveolar macrophages and blood monocytes (A), 1308
signal transduction, synthetic peptide effects (A), 1714
signal transduction pathway (A), 1714
thrombin-stimulated prostaglandin production, endothelial cells (A), 2188
thrombocyte proliferation induced by, interleukin 6 effects (A), 1715
tumor necrosis factor secretions, monocytes (A), 2653
Interleukin 2
activated killer cells, tumor targets and (A), 908
acute lung injury induced by, prevention by pentoxicylline, 2432
pulmonary edema, vasoconstriction and (A), 909
Interleukin 4
anti-inflammatory effects (A), 1307
immunomodulatory role, human B cells (A), 504
inflammatory effects (A), 1714
Interleukin 5, autoimmune response to, B cells (A), 505
Interleukin 6
differentiation factor, myeloid leukemic cells (A), 908
gene expression, neoplastic B cells (A), 2180
induction, exogenous cytokines, tumor-bearing mice (A), 2184
possible signal transducer (A), 2654
Interleukin 7, molecular cloning, growth factor activity and (A), 501
Interleukin 8, monocyte-derived neutrophil chemotactic factor, genomic structure (A), 2652
Intestine, hemodynamic responses, during hypoxia and hypermetabolism, 96
Ionomycin, leukocyte adherence and, 556
Ionophore A23187
products of arachidonic acid, pulmonary edema, 846
prostacyclin gradient, trachea, 276
Iron
deficiency
gluconeogenesis and, hepatocytes, 1868
physical work capacity and (A), 1711
Ischemia
limb, pulmonary microvascular permeability after (A), 1709
myocardial, coronary artery constriction, neuropeptide Y and (A), 914
pulmonary, alveolar oxygen during perfusion and, 528
Isobutylmethylxanthine, contractile agonist-specific relaxation, trachea, 181
Isoproterenol
amelioration, pulmonary edema caused by phosgene, 2542
cardiac response to, hypoxia-induced decrease in, 523
contractile agonist-specific relaxation, trachea, 181
receptor reserve and β-adrenergic sensitivity, tracheal smooth muscle, 1294
reversible changes, endothelial permeability, 2032
vasodilation stimulated by, heart failure, 2026
Isotopes, stable, amino acid exchange between plasma and erythrocytes, 2383

J

Junction, myotendinous, basement membrane at, adhesive strength of muscle cells, 1063

K

Kainic acid, central pathway, phrenic-to-phrenic inhibitory reflexes, 1364
Kidney, ANF protection, right ventricular overload, 1612
Kidney cells, inner medullary collecting duct, cation channel in (A), 2183
Kinase, evidence for, CD3 antigen regulation (A), 499
Kininogen, high-molecular-weight, blood coagulation, pulmonary edema, 1336
Krogh-Erlang equation, oxygen delivery and uptake, 1234
Kyphoscoliosis, anesthetized patients, respiratory elastic load compensation in, 1024

L

Lactate
blood, work rate effects, 547
breakdown, during exercise, skeletal muscle, 116
formation, tissue hypoxia and, 2640
metabolic change and, muscle fatigue, 648
muscle
during exercise, EMG, 1245
output during contractions, 2158
muscle metabolism, during treadmill sprinting, training effects, 2376
plasma, response to treadmill exercise, 160
production, acute anemia and, during exercise, 756
release, after altitude acclimatization, muscle, 1456
threshold
incremental exercise, 885
plasma catecholamines during, exercise and, 1319
ventilatory thresholds and, 2640
Lactic acid, muscle pH, reflex pressor response to, 256
Lamellar bodies, surfactant subtypes, metabolic relations, 414
Laparotomy, midline, expiratory muscle activation and, 599
Laryngeal nerves
chronic section of, ventilation in (A), 2171
intralaryngeal branches respiratory activity, 1171
respiratory activity, lung volume effects, 1179
Larynx
muscle, application of negative pressure pulses, 366
negative pressure effects, response to occlusion, sleeping infant, 749
posterior cricoarytenoid muscles, state-dependent hypotonia (A), 495
Legionnaire's disease, cell-mediated and protective immunity, vaccination with major secretory protein (A), 2177
Leishmaniasis, chemotherapy of, drug delivery to macrophages (A), 2184
Leucine, metabolism, β-adrenergic blockade effects, 221
Leukemia
acute myelogenous, cytokine participation in (A), 2654
lymphoblastic, B lineage (A), 2183
myeloblastic, clonogenic cells, tumor necrosis factor-α stimulation of growth in (A), 2182
Leukocytes
adherence, inflammatory stimuli and, 556
polymorphonuclear, purified influenza virus effects (A), 1713
Leukotriene B_4, production, bacterial lipopolysaccharides for (A), 501
Leukotrienes
capsaicin-induced bronchodilation, mild asthma, 856
oleic acid-induced injury, fatty acid deficiency and, 811
release, enhancing factor (A), 505
Levator costae muscle, inspiratory function, 2614
Lidocaine, ozone action and, lung, 1535
Linear regression, piecewise, biological responses and, 390
Lingual epithelium, hyperosmotic sodium chloride effects, model (A), 1707
Lipids
clearance, lung (A), 497
metabolism, age and exercise training effects, 1638
peroxidation, skeletal muscle, exercise and food restriction effects, aging, 69
Lipogenesis, age and exercise training effects, 1638
Lipopolysaccharide
bacterial, blunted febrile response to, starvation and, 963
binding protein, lipid A binding site in (A), 2187
metabolism, endotoxic shock (pig), 1950
Liver
cirrhosis, hypoxemia in (A), 496
damage, α_1-antitrypsin and (A), 908
function, allopurinol kinetics in (A), 907
Loading
elastic, anesthetized kyphoscoliotics, 1024
inspiratory, masseter muscle activation with, 270
inspiratory flow-resistive, naloxone effects, 1747
mechanical, phase shifts in pressure-flow relations, 699
Locomotion: *see* Exercise
Longissimus muscle, interval training effects, draft-loaded (horse), 570

Lung
activated oxygen species, detection by chemiluminescence, 1912
aerosol deposition, model, 2014
air spaces and, protein clearance, awake state (sheep), 1887
albumin and blood cell accumulation, method of evaluation, 1479
alveolar permeability, surfactant and, 688
ANF protection, right ventricular overload, 1612
asymmetric airway obstruction, aerosol deposition with (sheep), 2579
bleomycin-injured, parenchymal cells, smooth muscle actin in (A), 1308
C-fibers
airway responses to, respiratory drive effects, 203
vagal, stimulation effects on respiratory motor output, 2249
chronic obstructive disease
ANF in (A), 493
measurement of flow resistance, 933
collateral pathway, after flow interruption, 1213
conservation, phospholipids, hyperventilation, and temperature in (A), 1301
diffusing capacity, blood flow in capillaries (A), 2167
disease, interstitial, bronchoalveolar lavage in, 1443
distension, pneumonectomy, lung volume after (ferret), 1418
edema liquid entry, airway level of, 2234
end-expiratory volume transition, infant, 2107
expansion, regional variations, 1371
extravascular water, emboli size effects, 663
fluid balance, before and after premature birth (lamb), 2645
fluid volume, albumin exclusion and (sheep), 1323
full-length cDNA studies, enzyme induction and (A), 910
function
computerized respiratory system, 1687
dilution index format for single-breath tests, 1699
steroids and surfactant, premature infant, 1377
gas exchange, during exercise, altitude acclimation effects, 2286
granulomatous disease, shunt pathway perfusion in, 1717
growth
chronic hypercapnia and, 311
fetal, maternal cold and exercise exposure and (A), 904
maximal lobar emptying rates and, 1164
hemodynamics
hyperoxia and dimethylthiourea effects, neonate (A), 1708
reduced erythrocyte deformability and, 2593
hydrophobic surfactant proteins in, mRNA's for (A), 905
hyperoxic injury, cimetidine reduction of (lamb), 2586
impedance, forced oscillation measurement, 1623
inflammation, intracellular adhesion molecule-1 on phorbol-ester-induced (A), 2649
injury
hyperoxia and mechanical ventilation, neonate (piglet), 1007
modulation by glutathione repletion, 2316
oleic acid-induced, fatty acid deficiency and, 811
oleic acid-induced, intrapulmonary shunt, 833
oxidant, blood sulfhydryl levels and, 1070
oxygen- and pneumonia-induced (baboon), 346, 357
phosgene, dibutyryl cAMP amelioration of, 2542
plasma and lipopolysaccharide (A), 505
superoxide anion release and (lung), 2481
interleukin 2-induced injury, prevention by pentoxicylline, 2432
interstitial conductivity, albumin, dextran, and hyaluronidase effects, 606
interstitial disease, polymyositis and, anti-KJ associated with (A), 2187
interstitial pressure, dehydration effects, 839
lipids derived from, surfactant-associated, comparison (A), 904
liquid volume, during oligohydramnios, fetus (sheep), 2401
lobes
arterial occlusion in, phasic capillary pressure determined by, 2205
transvascular forces in, 628
macromolecular measurements, noninvasive, analysis of, 2343
major surfactant protein, fetus (A), 2177
mechanics
nonadrenergic bronchodilation, 1764
short duration flow pulses (A), 2174
micromechanics, postnatal development, elastic moduli of (piglet), 1422
microvascular injury, fluid filtration, furosemide reduction of (lamb), 1990
morphometry
alveolar ducts, 2512
oxygen transport during exercise (horse), 862
normal sounds, adaptive filtering (A), 497
oscillatory flow, model bifurcation, 147
ozone, mechanism of action in, 1535
parenchyma
airway and, dose-response behavior comparison, 1220
elastin and collagen distribution, 1941
expansion, CT measurement, 226
linear elements, 1930
surface-to-volume ratio, light-scattering stereology, 1873
peripheral responses, regional and temporal variation, dry air, 1727
periphery, hyperosmotic-induced bronchoconstriction, 2571
plasma ANF, exercise, hyperpnea, and bronchoconstriction effects, 2427
pressure: *see* Pressure
prostacyclin synthesis, norepinephrine induction of, 330
protein permeability, elevated vascular pressure transient effects, 305
pulmonary capillary pressure, arterial occlusion technique (A), 2168
pulmonary vascular reactivity, oxygen radicals in, 1903
reperfusion
injury, reactive oxygen species role in (A), 905
lack of alveolar oxygen during, 528
responses, phospholipase A_2, 2495
small cell cancer, aminoacylase-1 expression in (A), 1716
surface-to-volume ratio, step response of, light-scattering stereology, 1873
surfactant monolayers, captive bubble method effects, 2389
surfactant secretion, newborn, 1597
test functions, computerized respiratory system, 1687
tissue, imperfect elasticity, 2408
transvascular escape rate, macromolecular measurements, 2343
vascular congestion, rapid shallow breathing caused by, 2257
vascular leak, intracranial pressure effects, 1185
venules
response to hypoxia and anoxia, 2147
response to reduced oxygen tension (A), 2175
viscoelastic behavior, determined by flow interruption, 2219
volume: *see* Volume
water, measurement, newborn, 1286
weight, CT and breathing of soluble gases, 166
Luteal phase, menstrual cycle, carbon dioxide changes during, 517
Lymph, lung, albumin exclusion and (sheep), 1323
Lymphatics, lung, protein clearance, awake state (sheep), 1887
Lymphocytes
intraepithelial, cytolytic activity and Thy-1 expression in (A), 913
subpopulations, adrenocorticotropic hormone receptors (A), 2178
tumor infiltrating (A), 1713
Lymphokines
messenger RNA stability, surface-mediated T cell activation pathway (A), 1308
production, T lymphocyte clones (A), 2180
Lymphotoxin, production, tonsillar B lymphocytes and B lymphocyte cell lines (A), 2187

M

Macromolecules, glomerular filtration of, network structure (A), 906
Macrophages
alveolar
pulmonary immune response and (A), 2654
recombinant interferon-γ and (A), 2186
arachidonic acid metabolites in, mast cell mediators (A), 915
C-reactive protein binding (A), 916
function, calcitonin gene inhibition (A), 2185
inflammatory protein-1 (A), 500
Malaria, thermogenesis and, brown fat, 1020
Malate dehydrogenase, skeletal muscle, strength training effects, 123

Malnutrition, exercise and, emphysema, 1048
Malonyl-CoA, decrease, muscle, during exercise, 2230
Mammary cells, mammastatin production in (A), 2180
Mandible, masseter muscle activation, inspiratory loading, 270
Marrow graft, rejection, novel cell type responsible for (A), 2188
Masseter muscle, activation, inspiratory resistance loading, 270
Mast cells, antigen challenge, tissue eosinophilia (guinea pig), 1133
Maturation: *see also* Development; Growth
  allergen effects and, tracheal circulation (sheep), 1256
  apneic threshold and (lamb), 643
  tracheal, acetylcholinesterase activity and (swine), 174
Meal: *see* Feeding
Meclofenamate, oxygen metabolism and, endotoxemia (pig), 1950
Meditation, metabolic rate, respiratory exchange ratio and apnea during (A), 495
α-Melanocyte-stimulating hormone, modulation, interleukin 1, tumor necrosis factor, and neutrophil migration (A), 503
Menstrual cycle
  carbon dioxide changes during, 517
  fluid regulation and, exercise effects, 736
Mepyramine, allergen effects and, tracheal circulation (sheep), 1256
Mesothelium, asbestos-induced, mesothelial cell model systems for (A), 1308
Metabolic hypothesis, two-cytochrome, denervated carotid body, 1578
Metabolic rate, hypoxia effects, during cold exposure, awake state, 32
Metabolic response, cold, eumenorrheic and amenorrheic women, 282
Methacholine
  airway responsiveness, adenosine monophosphate effects, 792
  bronchial hyperresponsiveness to, impaired left ventricular function and (A), 1301
  lateral nasal gland secretion and (ferret), 2553
N-Methyl-D-aspartate, respiratory effects of, ventrolateral medullary surface, 1814
3-Methylhistidine, excretion, increase with weight training (A), 1712
Methylxanthines
  maximal tetanic force, diaphragm endurance and, 1655
  muscle contractility and (frog), 671
Microcirculation *see also* Blood flow; Circulation
  oxygen delivery and uptake, Krogh tissue model, 1234
  pulmonary, dehydration effects on interstitial pressure, 839
Microgravity
  exercise training protocols at, astronauts, 2191
  one-legged immobilization, insulin action after, 19
  respiration during, 1542
  spaceflight, energy and thermal regulation during, 507
Microscopy, venous air embolism, lung, 1898
Models
  aerosol deposition, isolated lung, 2014
  airway hyperresponsiveness, inflammation and PAF (sheep), 406
  bifurcation, oscillatory flow in, 147
  high-frequency ventilation, lung pressure swings during, 993
  Krogh tissue, oxygen delivery and uptake relations in, 1234
  lumped parameter, respiratory mechanics determined by expiratory flow interruption, 2276
  mathematical
    lactate threshold during exercise, 885
    pressure control, ventilation, 1081
    running performance, 453
    work rate effects on gas exchange, 547
  skin blood flow, inert gas permeation and, 1670
  spring-and-dashpot, respiratory system, 2556
  tracheobronchial, flow distribution through airway during inhalation and exhalation, 1649
  two-cytochrome metabolic, carotid body after hemorrhage, 60
Monoclonal antibodies
  interleukin 1β peptide 163-171 (A), 2177
  recognizing transforming growth factor-β (A), 500
Monocytes
  activation, cross-linking monocytic antigens (A), 913
  adherence, inflammatory stimuli and, 556
  blood, strenuous exercise effects (A), 2171
  fibroblast fibronectin receptor in, synthesis and expression (A), 2178
  interferon gamma-activated, downregulation of transferrin receptors (A), 2178
Motor units, transitional, overloaded skeletal muscle, 2049
Mountain sickness, acute, blood coagulation, pulmonary edema, 1336
MRS: *see* Spectroscopy, magnetic resonance
Mucus, clearance, asymmetric airflow oscillations, 614
Multiple sclerosis, tumor necrosis factor identified in, brain (A), 2651
Muscle
  abdominal
    activation, midline laparotomy effects, 599
    naloxone response to flow-resistive load, 1747
  activation, impulse propagation and, maximal voluntary contractions, 1835
  adaptations, training, obesity and, 1807
  aging, contractile properties, 1401, 1409
  airway, application of negative pressure pulses, 366
  blood flow: *see* Blood flow
  contraction, oxidation/reduction state of cytochrome oxidase during, 2158
  contrasts, male and female bodybuilders, 24
  dystrophic, extracellular matrix, fibroblast growth factor in (A), 2180
  exercise in, glucocorticoid deterrence and myosin heavy chain turnover, 2311
  expiratory, midline laparotomy effects, 599
  fatigue
    long maximal voluntary contractions, 1835
    mechanical influences (A), 2646
  free fatty acid availability, temperature regulation in cold water and, 2466
  glucose utilization, epinephrine-induced hyperglycemia, 1770
  growth, hindlimb suspension effects, 1827
  hypertrophy, force deficit during onset of, 2600
  inspiratory, strength, measurement of (A), 495
  intercostal
    contraction, inspiratory action, 1395
    expiratory and inspiratory, 592
    patterns of activity, 2087
    selective recording, electromyography, 2125
  intercostal/accessory, artificial ventilation (A), 494
  interval training effects, draft-loaded (horse), 570
  intramuscular pH, during exercise, EMG, 1245
  intrapulmonary artery and vein, ACh and histamine effects (A), 1706
  lactate release, after high altitude acclimatization, 1456
  laryngeal
    respiratory activity, 1171
    respiratory activity, lung volume effects, 1179
  malonyl-CoA, decrease during exercise, 2230
  metabolism
    submaximal exercise, 324
    treadmill sprinting, training effects, 2376
  morphology, weight bearing effects on adaptation to synergist ablation, 636
  organ culture (frog), 466
  oxidative capacity, anemia and, endurance exercise, 765
  oxygen pressure, during hypoxemia, 1092
  pH, decreasing, reflex pressor response to, 256
  pharyngeal dilator, motor unit regulation (A), 2649
  red, maximal oxygen uptake in (A), 904
  respiratory
    activation, hypercapnia and hypoxia effects, 1776
    activation during fatigue, 720
    contribution to tidal volume and, 1438
    cortisone treatment effects on diaphragm atrophy, 2420
    diaphragm, regional function, 655
    diaphragmatic electromyography, 1525
    efficiency in healthy individuals (A), 2649
    expiratory intercostal activity, 1518
    inspiratory function of, 2614
    inspiratory intercostal, activity, 2087
    left hemidiaphragm preparation, 2141
    poikilocapnic hypoxia effects, 2303
    sleep apnea effects, 973
    theophylline effects, 1655
    thickness-volume relations, diaphragm, 1560
  striated

Muscle (*continued*)
calcium role in (A), 2175
calcium transport across plasma membrane (A), 2175
thigh, one-legged immobilization, insulin action after, 19
upper airway dilator, length, airway occlusion effects, 2296
ventilatory, mechanical loads (A), 496
wrist flexor, measured with MRS, 926
Muscle, heart, hypoxia, protection with exercise training (A), 498
Muscle, skeletal
adenine nucleotide degradation, during exercise, 116
contractility, aminophylline effects (frog), 671
glucose metabolism, hypoxia effects, exercise (A), 2169
glucose uptake, positron-emission fluorodeoxyglucose, 1569
glycogenolysis regulation in, 2243
hemodynamics, during hypoxia and hypermetabolism, 96
left hemidiaphragm preparation, 2141
lipid peroxidation, exercise and food restriction during aging, 69
overloaded, motor units in, 2049
β-receptors, heart failure, 2026
sodium-potassium pump concentration in, aged trained subjects, 2491
tetanic force and endurance, theophylline effects, 1655
Muscle, smooth
airway
acetylcholine sensitivity of, 1331
cholinergic neurotransmission, somatostatin effects (ferret), 2397
permeabilized, receptor-coupled (A), 912
tracheal
acetylcholinesterase activity and (swine), 174
antigen effects on circulation (sheep), 1256
contractile agonist-specific relaxation, 181
coupling mechanism, phorbol ester effects (A), 2645
epithelial modulation of tension, 713
epithelial vs. serosal stimulation, 2522
membrane potential, sodium removal effects, 2078
receptor reserve and β-adrenergic sensitivity, 1294
responses to excitation of C-fibers, 203
vascular, endothelin effects (A), 1714
Muscle cells
adhesive strength, basement membrane, myotendinous junction, 1063
smooth, potassium channels, arachidonic acid and fatty acid effects (A), 1716
Muscle fiber
cross-sectional area, male and female bodybuilders, 24
diaphragm, capillary density and oxidative capacity, 620
fast-twitch and slow-twitch, enzyme activities, trained athletes, 83
medial gastrocnemius
adaptations to exercise training, obesity and, 1807
periodic weight support effects, 945
types, intercostal, histochemical characteristics, 592
Myelin, tubular, metabolic relations, 414
Myeloma, multiple, IL-3 and IL-6 promotion of (A), 2650
Myeloma cells, vasoactive intestinal peptide (A), 909
Myeloperoxidase, pathway, neutrophil, dimethylthiourea effects, 1056
Myopathy, cortisone treatment, diaphragm atrophy, 2420
Myosin
acetylcholine and, airway, 1331
phosphorylation, cytoplasmic calcium ions in (A), 915
Myosin heavy chain, turnover, glucocorticoid deterrence by exercise and, muscle, 2311
Myosin light chain, cardiac, phosphorylation of, exercise effects, 2447

N

NADH, shuttle enzymes, skeletal muscle, strength training effects, 123
Nafamstat mesilate: *see* FUT-175
Naloxone, early response, inspiratory flow-resistive load, 1747
Nasal gland, lateral, secretion (ferret), 2553
Nasal obstruction, reduced carbon dioxide pressure, disordered breathing and, during sleep, 970
Necrosis, mucosal, alveolar pressure during constant-flow ventilation and, 1489
Neonate: *see also* Infant; Newborn
developmental changes, tracheal mucociliary system (sheep), 824
hypoxic depression, dopaminergic pathway mediating, 1271
lung growth, elastic moduli during (piglet), 1422
lung injury, hyperoxia and mechanical ventilation (piglet), 1007
maturational and anesthetic effects, apneic threshold (lamb), 643
preterm, pleural pressure measurement, 889
Neural antagonists, pulmonary vascular response to, pentobarbital anesthesia effects (A), 1305
Neurochemicals, respiratory control and, during development, 1
Neurofibromatosis, translocation breakpoint, physical mapping of (A), 1714
Neurogenesis, chemosensitivity and ventilatory, retrofacial nucleus function in (A), 1712
Neurokinins, airway responses to, degradative enzyme modulation of, 2504
Neuromodulators, respiratory control and, during development, 1
Neuromuscular transmission, muscle fatigue, 1835
Neurons
activity, piecewise linear regression functions, 390
nodose, serotonin excitation and, 584
respiratory, phrenic-to-phrenic inhibitory reflexes, 1364
sympathoexcitatory, central respiratory modulation of (A), 494
Neuropathy, acrylamide, respiratory pattern in (A), 1708
Neuropeptides, vasodilation, pulmonary vessels, 1265
Neurotensin, regulation, macrophage colony-stimulating factor, myelopoiesis (A), 914
Neurotransmission, cholinergic, somatostatin effects, trachea (ferret), 2397
Neurotransmitters, respiratory control and, during development, 1
Neutrophils
activation, superoxide anion release and (lung), 2481
adherence, inflammatory stimuli and, 556
kinetics, infusion of zymosan-activated plasma and, 88
myeloperoxidase pathway in, dimethylthiourea effects, 1056
phagocytosis in, molecular regulation (A), 504
Newborn: *see also* Infant; Neonate
chronic hypercapnia, respiratory adaptation to, 311
lung water measurement, X-ray fluoroscopy, 1286
periodic breathing, hypoxia and (lamb), 1226
respiratory system, lung volume effects, 1192
surfactant secretion, 1597
Nicotine, carbon dioxide interaction and, carotid chemoreceptors, 232
Nicotinic acid, availability, temperature regulation in cold water and, 2466
Nitric oxide, cytostasis and respiratory inhibition tumor target cells (A), 1310
Nitroprusside, synthesis, lung, norepinephrine induction of, 330
NMDA: *see N*-Methyl-D-aspartate
Nonadrenergic inhibitory system, bronchodilation, adult and young, 1764
Norepinephrine
carotid body, chronic carbon monoxide inhalation and, 239
plasma, lactate threshold during exercise and, 1319
prostacyclin synthesis and, lung, 330
radio frequency energy and, rewarming from mild hypothermia, 1208
sympathetic stimulation, pulmonary vascular bed, 371
Normovolemia, pneumatic antishock garment effects, 339
Nuclear magnetic resonance
^{31}P-
energy metabolism in submaximal exercise, 324
intracellular pH and phosphate metabolites, hypothermia effects, brain, 2527
muscle, ovariectomy effects on energy metabolism, 2060
Nutrition: *see also* Feeding
energy and, thermal regulation, bed rest and spaceflight, 507

O

Obesity
glottic and cervical tracheal narrowing, obstructive sleep apnea, 2565
muscle adaptations, exercise training, 1807
Oleic acid
pulmonary injury induced by fatty acid deficiency and, 811
intrapulmonary shunt in, 833
Oligohydramnios, lung liquid volume during, fetus (sheep), 2401

Opioids
endogenous, early response to inspiratory flow-resistive load, 1747
inhibition, mucus secretion in bronchi (A), 1305
pain perception and, endurance exercise (A), 1711
Organum vasculosum laminae terminalis, enhancement of febrile responses, pyrogen, 1740
Oscillation
forced
chest wall vs. abdominal displacement during, 1472
flow and volume dependence of respiratory mechanical properties, 2212
measurement, lung impedance, 1623
Osmolality, glucose ingestion and, during exercise, 76
Osmoregulation, piecewise linear regression functions, 390
Osteoporosis, bone density, weight-bearing athletes, 1100
Ouabain, binding, aged trained subjects, skeletal muscle, 2491
Ovarian hormones, energy metabolism and, exercise muscle, 2060
Ovariectomy, energy metabolism and, exercise muscle, 2060
OVLT: *see* Organum vasculosum laminae terminalis
Oxidation, leucine, β-adrenergic blockade effects, 221
Oxidative capacity
diaphragm motor units and, 620
wrist flexor muscles, measured with MRS, 926
Oximetry, pulse, during exercise, 300
Oxygen
activated species, detection by chemiluminescence, lung, 1912
alveolar, during lung reperfusion, 528
binding properties, blood (owl) (A), 1710
consumption
anemia and, endurance exercise, 765
cold exposure and, awake state, 32
malaria effects, brown fat, 1020
maximal, blood gas measurement, exercise (horse), 879
maximal, muscle adaptation to exercise, obesity, 1807
maximal, tissue diffusion limitation, 291
measurements, validation during artificial ventilation, 2129
neural output response to hypoxia, pregnancy and, 797
normobaric hypoxia, awake state, 1551
deficit, energy release during bicycle exercise, 1881
delivery, Krogh tissue model, 1234
difference, alveolar-arterial partial pressure of, during exercise, 2286
effects on composition, heart and brain, embryo (chick) (A), 2165
environmental, blood flow and diffusing capacity with, skin (A), 1710
lung injury induced by (baboon), 346, 357
mechanical ventilation and, lung injury, neonate (piglet), 1007
metabolic pathway, tissue oxygen measurements, carotid body, 1578
metabolism, systemic and mesenteric, endotoxemia and (pig), 1950
microelectrode, carotid body after hemorrhage, 60
partial pressure, stimulation of erythropoiesis, 1383
pressure: *see also* Pressure
erythrocyte carbon monoxide uptake as a function of, 2265
saturation, determination of, 902
reactive species, reperfusion injury in lung and (A), 911
saturation, blood, measurement, Operation Everest II, 2135
tension, decrease, response of pulmonary arteries to (A), 497
toxicity
alveolar permeability in, surfactant replacement and, 688
respiratory regulation and, 2351
transport
during exercise (horse), 862, 871
lactate production, during exercise, 756
uptake
during hypoxia and hypermetabolism, 96
dynamic exercise and, 744
heart rate and, exercise work rate effects, 2535
lactate threshold during exercise, 885
maximal, limits, 1299
maximal, response to treadmill exercise, 160
maximal, running performance, model, 453
maximal, training effects, 39
muscle, during repetitive contractions, 2158
onset of exercise and, 1106
peak, 30 days bed rest with isokinetic training, 1820
work rate effects, 547
venous pressure, hypoxemia and, 1092
ventilatory response to, aminophylline effects, 1150
Oxygen-18, energy cost, training for jungle warfare, 14
Oxygenation, hyperbaric, respiratory control and, 2351
Oxygen radicals, simultaneous measurement, pulmonary vascular reactivity in lung, 1903
Oxyhemoglobin, carotid body, two-cytochrome metabolic model for, 60
Ozone
action, lung, 1535
exposure, breathing pattern and metabolic rate response (A), 1304

P

PAF: *see* Platelet-activating factor
Parafoetal period, air space gas tensions, hatching process (fowl) (A), 2166
Paraplegia, cardiac output, exercise hyperpnea, 2006
Parathyroid hormone, suppression, 1,25-dihydroxyvitamin D and (A), 909
Parathyroid hormone-like protein, synthetic analog, transforming growth factor-like properties of (A), 502
Paresis, vascular, detection by chemiluminescence, 1912
PDGF: *see* Platelet-derived growth factor
Pentoxicylline, prevention, interleukin 2-induced lung injury, 2432
Peptides
respiratory control and, during development, 1
sequence-specific, cleavage (A), 502
Permeability
alveolar, hyperoxia, surfactant replacement and, 688
endothelial, reversible changes, chromatography, 2032
endothelial monolayers, 1997
interleukin 2-induced lung injury, prevention by pentoxicylline, 2432
interstitial, pulmonary interstitium, 606
lung epithelial, technetium-99m-DTPA clearance, 2055
microvascular
airway, inflammatory mediator effects (A), 1707
airway mucosa, 917
protein, lung, elevated vascular pressure effects, 305
pulmonary
adult never-smokers, 422
transferrin flux (sheep), 1850
pulmonary vascular
polycation effects, awake state (sheep) (A), 1713
to protein, intracranial pressure effects, 1185
Pertussis toxin, T lymphocytes and, CD3 mediation of (A), 501
pH
gas bubbling, platelets and, 1250
intracellular, hypothermia effects, brain, ^{31}P-NMR, 2527
intramuscular, muscle during exercise, EMG, 1245
muscle
decreasing, reflex pressor response to, 256
exercise, sarcoplasmic reticulum function and, 2072
muscle metabolism, during treadmill sprinting, training effects, 2376
pulmonary vascular tone, arachidonate metabolism and, 445
Phagocytes, mononuclear, α_1-antitrypsin synthesis in (A), 2185
Phagocytosis, immobile subset of plasma membrane (A), 910
Pharynx
muscle, application of negative pressure pulses, 366
narrowing, obstructive sleep apnea, 2565
negative pressure effects, response to occlusion, sleeping infant, 749
Phenyldiguanide, airway responses to excitation of C-fibers, respiratory drive effects, 203
Phorbol esters
leukocyte adherence and, 556
sodium and calcium influx induced by, airway smooth muscle cells (A), 498
Phosgene, pulmonary edema caused by, dibutyryl cAMP amelioration of, 2542
Phosphate, inorganic, glycogenolysis regulation, skeletal muscle, 2243
Phosphatidylcholine, metabolism, preterm ventilation (lamb), 429
Phosphatidylinositol kinase, role, PDGF receptor signal transduction (A), 500
Phosphocreatine
metabolic change and, muscle fatigue, 648

Phosphocreatine (*continued*)
short-term power and, recovery after dynamic exercise, 677
Phospholipase A_2
altered specificity of, depletion of surface loop (A), 1715
pulmonary responses to, perfused lung, 2495
Phospholipids, alveolar, pool size, newborn, 1597
Phosphoramidon, nasal gland secretion and (ferret), 2553
Phosphorylation, glycogenolysis regulation, skeletal muscle, 2243
Phrenic nerve
activity
central mechanisms regulating, fastigial nucleus and (A), 1713
synchronous discharge (A), 1305
C-fibers, airway responses to, respiratory drive effects, 203
inhibitory reflexes, central pathway of, 1364
intralaryngeal branches
respiratory activity, 1171
respiratory activity, lung volume effects, 1179
NMDA effects, ventrolateral medullary surface, 1814
stimulation
bilateral, awake state, 1311
diaphragmatic plate electrode (hamster), 1341
Phylogenetic stains, ribosomal RNA-based probes (A), 500
Pilocarpine, reflex bronchoconstriction and, asthma, 2461
Pirenzepine, receptor reserve and β-adrenergic sensitivity, tracheal smooth muscle, 1294
Plantaris muscle, exercise in, glucocorticoid deterrence and myosin heavy chain turnover, 2311
Plasma
erythrocytes and, amino acid exchange, 2383
zymosan-activated, neutrophil kinetics in, 88
Platelet-activating factor
phospholipase A_2, 2495
albumin and blood cell accumulation, lung, method of evaluation, 1479
bronchoconstrictor response to, 377
inflammation, airway hyperresponsiveness and (sheep), 406
production, endothelial cells (A), 915
Platelet-derived growth factor, signal transduction (A), 915
Platelets, gas bubbling effects, 1250
Plethysmography
inductive, chest wall vs. abdominal displacement during forced oscillations, 1472
respiratory inductance
changes in time constants, infancy and childhood, 2112
transition of end-expiratory volume, infant, 2107
volume-displacement, thoracic gas compression, 780
Pneumatic antishock garment, inflation, normovolemia and, 339
Pneumocytes
type II
definition of immunologic marker for (A), 913
density-independent isolation (A), 505
matrix-derived soluble components (A), 504
Pneumonectomy
lobar emptying rates, compensatory lung growth and, 1164
lung distension in, lung volume after (ferret), 1418
Pneumonia, lung injury induced by (baboon), 346, 357
Polycythemia, hemodynamics, during hypoxia and hypermetabolism, 96
Polypnea
hyperthermic, afferent vagal response during (pigeon) (A), 905
thermal, hypoxia effects and, awake state, 578
Pons, rostral lateral, lesions, central chemosensitivity and (lamb), 1113
Posture
head-up, expiratory muscles and tidal volume, 1438
head-up tilt, baroreflex stimuli effects, 2369
prone vs. supine, variations in lung expansion, 1371
Potassium chloride, epithelial modulation of tension and, trachealis muscle, 713
Potentials
action, compound muscles, diaphragmatic electromyography, 1525
membrane, contracture and change produced by sodium removal, trachea and bronchiole, 2078
Pregnancy: *see also* Fetus
response to hypoxia and, ventilatory and carotid body neural output, 797
Prekallikrein, plasma, blood coagulation, pulmonary edema, 1336
Pressor response, reflex, decreasing muscle pH and, 256
Pressure: *see also* Blood pressure
airway
air entrainment effects, endotracheal gas injection, 771
intercostal muscle contraction, 1395
alveolar
closed-chest during flow interruption, 488
inhomogeneity, during constant-flow ventilation, 1489
arterial, preexercise anticipatory response, muscle, 1855
capillary, critical, lung lobes, 628
continuous positive airway, tracheal reflexes and, 954
control, mathematical model, 1081
gas bubbling, platelets and, 1250
helium-oxygen, dopamine in striatum (hamster), 1617
high, metabolic response to cold and (A), 2647
inertial, respiratory system (pony), 534
interstitial, lung, dehydration effects, 839
intracranial, pulmonary vascular permeability to protein and, 1185
intrathoracic
bronchopleural fistula, 1591
variations, circulatory assistance by (A), 903
liquid, extrapleural and pleural distribution, size differences, 1967
lower body negative, responses to aerobic training, 894
lung
gas transport and, during high-frequency oscillation, 985
swings, high-frequency ventilation, model, 993
mouth, flow interruption during forced expiration, 2631
negative, upper airway, sleeping infant, 749
negative pulses, application of, upper airway muscle activity, 366
occlusion, pulmonary circulation, 1277
oxygen, tissue diffusion limitation, 291
phasic capillary, arterial occlusion and, lung lobes, 2205
pleural
measurement, preterm neonate, 889
posture effects on lung expansion, 1371
pleural liquid, apposition and lung zone (A), 903
rapid oscillations, partial expiratory flow-volume measurements, infant, 1662
tissue oxygen partial, hypoxemia, 1092
transdiaphragmatic, plate electrode stimulation (hamster), 1341
transdiaphragmatic twitch
lung volume effects (A), 495
phrenic nerve stimulation, awake state, 1311
vascular, elevated transients, protein permeability in lung and, 305
ventricular, myosin light chain phosphorylation, exercise and, 2447
Pressure-flow relations
intrapulmonary shunt, oleic acid lung injury, 833
phase shifts in, response to inspiratory resistance, 699
Pressure-volume relations, airway, flow interruption during forced expiration, 2631
Progenitor, mast-cell committed (A), 911
Progesterone, respiratory control and, during development, 1
Progestin, synthetic, ventilatory response to hypoxia and, 1754
Prolactin, differential response, exercise training and, 804
Prostacyclin
metabolism, pH effects, 445
production, pulmonary vasodilation, fetus (lamb), 1512
synthesis, lung, norepinephrine induction of, 330
transepithelial gradient, trachea, 276
vascular resistance and compliance, pulmonary, 1495
Prostaglandin D_2, eosinophil accumulation and, lumen, trachea, 959
Prostaglandin E, modulation of pulmonary injury, glutathione and, 2316
Prostaglandin E_2, selectivity, interferon gamma receptor expression and (A), 909
Prostaglandins
bronchoconstrictor responses, PAF, 377
eicosanoids, lung injury and, 811
intravenous, blunted febrile response to, starvation and, 963
oxygen metabolism and, endotoxic shock (pig), 1950
production, pulmonary vasodilation, fetus (lamb), 1512

products of arachidonic acid, pulmonary edema, 846
respiratory control and, during development, 1
secretion, fibroblast inhibition of, alveolar epithelial cells (A), 2651
shunt pathway perfusion, lung granulomatous disease, 1717
Protein
cell adhesion and inflammation (A), 911
clearance, air spaces and lungs, awake state (sheep), 1887
kappa B-specific DNA binding (A), 1308
leak index, lung, 2343
metabolism, one-legged immobilization, insulin action after, 19
permeability: *see* Permeability
pulmonary surfactant, FcR- and CR1-mediated phagocytosis (A), 2654
pulmonary vascular permeability to, intracranial pressure effects, 1185
ras, G protein gamma subunit homology with (A), 2180
secretion, during glycophospholipid membrane anchor, signal peptide for (A), 499
synthesis, exercise, muscle, 2311
Protein kinase C, mutations in, phorbol ester resistance (A), 915
Proto-oncogene product, cellular, activation (A), 908
Pulmonary artery
blood gases, onset of exercise and, 1106
endothelial monolayers, albumin permeability in (A), 494
response, synthetic peptides (A), 2166
Pulmonary C-fibers
airway geometry and, 203
capsaicin-induced lower airway reflexes, 1428
vagal, stimulation effects on respiratory motor output, 2249
Pulmonary vascular bed
acetylcholine, tone effects on response to, 1388
neural influences (A), 1711
sympathetic nerve stimulation, analysis of responses, 371
Pulmonary vessels, vasodilation, calcitonin gene-related peptide and, 1265
Pump
sodium-potassium
hypoxia and glomus cell metabolism, 484
vastus lateralis muscle, aged trained subjects, 2491
Pyocyanin, mucus velocity and, trachea, 316
Pyrogen
endogenous
blunted febrile response to, starvation and, 963
febrile response to, immunoadjuvants and, 1734
enhancement of febrile response to, OVLT region, 1740

Q

Quadriplegia
acute, respiratory mechanics in (A), 497
mechanical ventilation in, air hunger (A), 1301

R

Radiation
electromagnetic, recovery from mild hypothermia, 1208
toxicity, endothelial cell subpopulations, 1585
Radiosensitivity, endothelial cell subpopulations, 1585
Receptors
adrenoceptors, sympathetic nerve stimulation in pulmonary vascular bed, 371
α-adrenoceptors, pulmonary, down-regulation, nedocromil sodium effects (A), 1709
β-adrenoceptors, skeletal muscle, heart failure, 2026
airway, tracheal epithelial inhibition of smooth muscle, 713
baroreceptors, ventilation and, species dependence, 2116
cell-substratum adhesion, endothelial cells (A), 1713
chemoreceptors
carotid, carbon dioxide-almitrine interaction, 232
central-peripheral, ventilatory interaction, awake state (A), 2167
central, pH dynamics in extracellular fluid, 193
firing, potassium and carbon dioxide loading effects (A), 1705
increased output, sustained hypoxia, 1157
peripheral, oleic acid lung injury, 833
peripheral stimulation, ventilatory control during exercise, 2438
epidermal growth factor, transmodulation, protein kinase C-independent mechanism (A), 499
Fc, for IgA, antisera to the secretory component (A), 2179
glucocorticoid, purified derivatives of (A), 2651
G protein-coupled, selective amplifications (A), 2183
interleukin 1, identification, monocytes (A), 905
muscarinic, β-adrenergic sensitivity and, tracheal smooth muscle, 1294
placental lactogen, purification (A), 501
pulmonary, airway secretion and, 682
pulmonary dopamine antagonist, evidence for, 1076
pulmonary stretch
airway reflexes, CPAP effects, 954
location (guinea pig) (A), 1709
thromboxane, Forssman shock and (guinea pig), 44
transforming growth factor-β, proteoglycan, 2178
Reflexes
airway, CPAP effects, 954
axonal, tachykinin effects, 2454
baroreflex
postural, EEG arousal and sleep, 2369
sympathetic nerve activity, awake state, 250
capsaicin and, lower airway, 1428
cardiovascular
decreasing muscle pH, 256
isometric exercise, 1801
Hering-Breuer, anesthetized kyphoscoliotics, 1024
inspiratory-inhibitory, lung volume effects, 1192
phrenic-to-phrenic inhibitory, Bötzinger complex region role in, 1364
respiratory, pulmonary vascular congestion and, 2257
tracheal submucosal gland secretion, pulmonary receptors and, 682
Renin
plasma activity, hypoxia and hypercapnia effects, awake state (A), 493
structure (A), 504
Renin aldosterone, β-adrenoceptor blockade effects, exercise at altitude, 141
Resistance
airway
dose-response behavior, 1220
flow distribution during inhalation and exhalation, 1649
collateral
after flow interruption, 1213
response to dry air, lung, 1727
expiratory, flow and volume dependence, 1013
flow
interruption technique for measurement, 933
paralyzed and anesthestized subjects, 2556
viscoelastic behavior determined by flow interruption, 2219
imperfect elasticity, lung tissue, 2408
inspiratory, response to, phase shifts in pressure-flow relations, 699
lung tissue, determined by expiratory flow interruption, 2276
pulmonary vascular
acrolein smoke exposure, bronchial artery ligation, 1001
bradykinin effects, fetus (lamb), 1512
reduced erythrocyte deformability and, 2593
respiratory
changes in time constants, infancy and childhood, 2112
density dependence of, 2323
stratum corneum, inert gas permeation and, 1670
tissue, lung impedance, 1623
vascular
ACh effects, pulmonary circulation, 1495
differential control, forearm and calf, exercise, 1791
forearm, response to aerobic training, 894
lobar, ANF and sodium nitroprusside in, 2269
splanchnic, angiotensin blockade effects, 786
Respiration
active mechanical properties, anesthetized kyphoscoliotics, 1024
baroreceptor effects, species dependence, 2116
calcium control of, muscle mitochondria (A), 2171
central chemosensitivity, lateral pontine lesions and (lamb), 1113
disordered, nasal obstruction and, during sleep, 970
during sleep, hypoxia and, 1198
during weightlessness, 1542
expiration, forced, tracheal imaging during, 1032
expiratory activity
functional mechanism of, 199
intercostal, 1518
expiratory flow resistance, flow and volume dependence, 1013
first and subsequent breaths, lung water measurement, fetus, 1286

Respiration (*continued*)
forced expiration, flow interruption during, airway pressure-volume curves estimated by, 2631
frequency, chest wall resistance and elastance (A), 2166
head-up posture, expiratory muscles and tidal volume, 1438
inspiration and expiration, poikilocapnic hypoxia effects, 2303
inspiratory duration, phase shifts in pressure-flow relations, 699
inspiratory loading, masseter muscle activation with, 270
inspiratory muscles of rib cage during, newborn (A), 1303
isoprenaline rating, exercise and, chemoreflex activation (A), 1307
neonatal, chronic hypercapnia and, 311
NMDA effects, ventrolateral medullary surface, 1814
periodic
hypoxia-induced, newborn (lamb), 1226
sleep apnea effects, 973
rapid shallow, pulmonary vascular congestion and, 2257
recovery from exercise, trapping of femoral blood flow and, 2608
regional diaphragmatic shortening, after thoracic surgery, awake state (sheep), 2357
sustained maximal, endurance exercise in athletes, 1759
variability, response to treadmill exercise, 160
work of inspiration, extrapulmonary volume displacements, 1785
Respirator, volume, computerized respiratory system, 1687
Respiratory distress syndrome
adult
oxygen- and pneumonia-induced injury (baboon), 346, 357
prevention by pentoxicylline, 2432
steroid and surfactant effects, premature newborn, 1377
surfactant metabolism, preterm ventilation (lamb), 429
Respiratory drive, airway responses and, lung C-fibers, 203
Respiratory exchange ratio, muscle adaptations to training, obesity and, 1807
Respiratory failure, muscle activation during, muscle, 720
Respiratory infection, viral, neutral endopeptidase and tachykinins in, 1504
Respiratory mechanics
determination, expiratory flow interruption, 2276
flow and volume dependence, studied by forced oscillation, 2212
geometry and kinematics, ribs, 707
head-up posture, expiratory muscles and tidal volume, 1438
impedance
corrected for upper airway shunt, 1973
density dependence of, 2323
inertance (pony), 534
lung impedance, forced oscillations, 1623
lung pressure, during high-frequency ventilation, 993
midline laparatomy effects, expiratory muscle activation, 599
newborn (A), 1302
paralyzed and anesthestized subjects, 2556
regional diaphragm function, 655
spontaneous breathing (turtle) (A), 1304
Respiratory pattern
motor output, stimulation of vagal C-fiber effects, 2249
rapid shallow breathing, pulmonary vascular congestion and, 2257
rowing and cycling exercise, 264
Respiratory regulation
acute hyperbaric oxygenation effects, 2351
airway occlusion effects, hyoid muscle length and airway volume, 2296
β-blockade, response to exercise during, 103
central pathway, phrenic-to-phrenic inhibitory reflexes, 1364
chest wall oscillation effects (A), 1304
chronic hypercapnia and, newborn, 311
dopamine receptors in (A), 2169
elastic loading, anesthetized kyphoscoliotics, 1024
exercise hyperpnea, 2006
extracellular pH dynamics, ventrolateral medulla, 193
intercostal muscle, patterns of activity, 2087
maturational and anesthetic effects, apneic threshold (lamb), 643
nasal obstruction and, during sleep, 970
neural output response to hypoxia, pregnancy and, 797
neurochemicals and, during development, 1
periodic breathing, hypoxia-induced, newborn (lamb), 1226
Respiratory sinus, arrhythmia, denervated heart, 1447
Respiratory syncytial virus, leukocyte subpopulations, IL-1 inhibitor production and (A), 2652
Respiratory system
computerized, test functions of lung and circulation, 1687
impedance, density dependence of, 2323
inertance (pony), 534
Respitrace, diaphragmatic displacement, 694
Reticuloendothelial cells, fevers, immunoadjuvant-enhanced, 1734
Rhinovirus, receptor, human (A), 910
Rhythm
respiratory, phase resetting of (A), 2646
respiratory and stepping, coupling, during locomotion, 110
Rib cage
displacement, during forced oscillations, 1472
mechanics, inspiratory function, 2614
Ribonuclease, double-sided, coincided with interferon (A), 1716
Ribs, geometry, kinematics and, 707

S

Salmonella, proteins, epithelial cell surface induction of (A), 501
Salt, perfusion, lung, fenoldopam effects, 1076
Sarcoidosis, bronchoalveolar lavage in, 1443
Sarcoma, growth, reticulum cell (A), 2651
Sarcomere, length, muscle capillary tortuosity in high altitude (A), 2170
Sarcoplasmic reticulum
altered function, high-intensity exercise, 2072
cardiac, molecular cloning (A), 912
Sartorius muscle, organ culture (frog), 466
Satellite cells, proliferation, muscle growth and, hindlimb suspension effects, 1827
SCH 23390, salt-perfused lungs and, 1076
Septicemia, platelet-activating factor, occupancy of platelet receptors for (A), 2179
Serotonin: *see also* 5-Hydroxytryptamine
airway hyperreactivity to, autosomal recessive inheritance of, 1125
excitation, nodose neurons, 584
microvascular mechanics, lung lobe, 2205
occlusion pressure, pulmonary circulation, 1277
respiratory control and, during development, 1
Sex differences
cold stress responses, 282
running performance, model, 453
Shock, Forssman, thromboxane receptors in (guinea pig), 44
Shunt
intrapulmonary, oleic acid lung injury, 833
pathway perfusion, lung granulomatous disease, 1717
upper airway, model, 1973
Silicon dioxide cristobalite, aerosol exposure, biphasic cellular and tissue response (A), 2649
Skin, inert gas permeation, model, 1670
Sleep
airflow obstruction, chemosensitivity and ventilatory response, 1630
breathing during, hypoxia and, 1198
nocturnal bronchoconstriction and, asthmatics, 243
onset, baroreflex stimuli effects, 2369
Small cellular lung carcinoma, susceptibility of lysis, levels of MHC class antigen and (A), 2186
Smoking
adult never-smokers, pulmonary permeability in, 422
pressure-volume curves in, α-1-antitrypsin deficiency (A), 1706
respiratory resistance and, aging effects (A), 1706
Snoring, tracheal hysteresis, sleep apnea, 1349
Sodium
CSF osmolality, sweating in heat stress and (monkey), 128
removal, membrane potential and, trachea and bronchiole, 2078
Sodium-calcium exchange, membrane potential, contracture produced by sodium removal, 2078
Sodium channels, cardiac, β-adrenergic inhibition of (A), 2653
Sodium-hydrogen exchange, interferon-γ enhanced expression (A), 1309
Sodium nitroprusside, ANF and, pulmonary vasodilator responses to, 2269
Soleus muscle
grafts, following training (A), 2166
hypertrophy, force deficit during onset of, 2600
Somatostatin, cholinergic neurotransmission and, trachea (ferret), 2397

Spaceflight, energy, thermal regulation and, 507
Species differences, baroreceptor effects, ventilation, 2116
Spectrometry, mass, doubly labeled water test of energy expenditure, 1922
Spectroscopy, magnetic resonance, measurement of wrist flexor muscles, 926
Spinal cord, stimulation, intercostal muscle contraction, 1395
Spirometry, ozone action, lung, 1535
Sports medicine, blood pressure changes, during exercise, 52
Stereology
  elastin and collagen distribution, lung alveolar parenchyma, 1941
  light-scattering, lung surface-to-volume ratio, 1873
Sternocleidomastoid muscle, respiratory and postural tasks in, motor unit firing during (A), 1705
Steroids
  anabolic, strength training and, effects on immune response (A), 2166
  antenatal, lung function, premature newborn, 1377
Stress, physical, vascular resistance, control during exercise, 1791
Stress test, running, blood pressure changes during, 52
Striatum, dopamine in, helium-oxygen pressure effects (hamster), 1617
Substance P
  nasal gland secretion and (ferret), 2553
  respiratory control and, during development, 1
  viral respiratory infection, 1504
Substrates
  energy, cold tolerance and, 438
  use and performance, preexercise feeding effects, 2066
Succinate dehydrogenase, periodic weight support and, gastrocnemius muscle fibers in suspension, 945
Sulfhydryl, blood level, hyperoxia and, 1070
Sulfur dioxide, reflex bronchoconstriction and, asthma, 2461
Superoxide anion
  endothelium-derived contracting factor (A), 2182
  release, decrease, zymosan-activated plasma and (lung), 2481
Superoxide dismutase, release, monocytes (A), 2187
Superoxide radical, hypoxic vasoconstriction reduction, 1912
Surfactants
  exogenous, ventilated immature newborn (A), 1304
  lung injury, neonate (piglet), 1007
  metabolism, preterm ventilation (lamb), 429
  monolayers, lung, captive bubble method effects, 2389
  postnatal, lung function, premature newborn, 1377
  pulmonary
    clearance, sustained exercise effects, 2055
    oxygen- and pneumonia-induced lung injury (baboon), 357
    tubular myelin from (A), 2174
  replacement, alveolar permeability in hyperoxia and, 688
  secretion, newborn, 1597
  subtypes, metabolic relations, 414
Sweating
  heat stress
    CSF angiotensin II and AVP effects (monkey), 134
    CSF osmolality in (monkey), 128
  thermoregulatory, control, exercise in heat and (A), 2648
Sympathetic activity, hypoxia and hypercapnia contrasting effects on, 2101
Sympathetic discharge, muscle mass, isometric exercise, 1801
Sympathetic nerve
  activity
    fatigue sensation and, 980
    isometric exercise, 1801
    measurement, awake state, 250
  response to hypoxia, ventilation and hypocapnia effects, 2095
  stimulation, pulmonary vascular bed, 371
Sympathetic nervous system, exogenous insulin effects, arterial blood pressure measurements, 2335
Synoviocytes, anchorage-independent growth of, arthritic and normal joints (A), 912

T

Tachycardia, hypoxic, bilateral carotid body resection effects (A), 904
Tachykinins
  bronchoconstriction and, hypocapnia-induced, 2454
  neutral endopeptidase and, viral respiratory infection, 1504
Tachyphylaxis, histamine, airway response to, asymptomatic asthmatics, 2622
Tachypnea
  hypoxic, thermal polypnea and, awake state, 578
  rapid shallow breathing, pulmonary vascular congestion, 2257
T cells, activation, IL-1 and IL-6 in (A), 2652
Technetium-99m-DTPA
  aerosolized, pulmonary clearance of, exercise effects, 2055
  pulmonary permeability, never-smokers, 422
Temperature
  air, thermoregulatory control, diving (seal) (A), 2646
  correction to blood gas measurement, exercise (horse), 879
  epithelial modulation of tension and, trachealis muscle, 713
  hypergravity acclimation and, 383
  intracellular pH and, brain, ^{31}P-NMR, 2527
  regulation
    conductive and convective heat flow in cold water, exercise in, 2473
    free fatty acid availability and, 2466
  viscosity and, respiratory gas, 472
Temperature, body
  changes, heat acclimation schedules and, 2154
  control, hypoxia effects, awake state, 578
  core, ephedrine-caffeine mixture effects, 438
  muscle, exercise, sarcoplasmic reticulum function and, 2072
  oral, menstrual cycle, carbon dioxide changes, 517
  skin, cold stress responses, sex differences, 282
Tendon, basement membrane at, adhesive strength of muscle cells, 1063
Terbutaline, amelioration, pulmonary edema caused by phosgene, 2542
Tetanic force, maximal, theophylline effects, 1655
Theophylline
  hypoxia and hyperoxia, ventilatory response to, 1150
  maximal tetanic force, diaphragm endurance and, 1655
Thermal response, cold, eumenorrheic and amenorrheic women, 282
Thermogenesis
  cold water, free fatty acid availability and, 2466
  malaria effects, brown fat, 1020
  nonshivering, hypoxia effects on metabolic rate, awake state, 32
Thermoregulation
  cold stress responses, sex differences, 282
  CSF osmolality, sweating in heat stress and (monkey), 128
  hypergravity acclimation and, 383
  piecewise linear regression functions, 390
  sweating in heat stress, CSF angiotensin II and AVP effects (monkey), 134
Thickness-volume relations, diaphragmatic, 1560
Thiorphan, airway responses and, neurokinins, 2504
Thorax
  extrapulmonary volume displacements, 1785
  geometry and kinematics, ribs, 707
Thrombin, permeability, endothelial monolayers, 1997
γ-Thrombin, nonthrombogenic, protein transport in lung (A), 1707
Thromboxane
  heparin-protamine reactions and, pulmonary hypertension (sheep), 1463
  modulation of pulmonary injury, glutathione and, 2316
  receptors: *see* Receptors
Thromboxane A_2
  bronchoconstrictor responses, PAF, 377
  metabolism, pH effects, 445
Thyroid, growth, transforming growth factor regulation of (A), 502
Thyrotropin-releasing hormone
  prolactin response to, exercise training and, 804
  respiratory control and, during development, 1
Time constants, changes, infancy and early childhood, 2112
Tissue
  connective
    elastin and collagen in lung alveolar parenchyma, 1941
    linear elements of lung, 1930
  diffusion limitation, maximal oxygen consumption, 291
  viscoelasticity, closed-chest during flow interruption, 488
T lymphocytes, proliferation, promotion of (A), 503
α-Tocopherol, exercise and food restriction effects, skeletal muscle, aging and, 69

Toxicity, oxygen, lung injury induced by (baboon), 346, 357
Tracer, positron, glucose uptake in hindlimb, 1569
Trachea
  β-adrenergic relaxation, agonist-specific interaction, 181
  basal cells, clones, growth and differentiation (A), 502
  cervical, narrowing, obstructive sleep apnea and, 2565
  cholinergic neurotransmission, somatostatin effects (ferret), 2397
  contraction, maturation of (swine), 174
  epithelial vs. serosal stimulation, role of epithelium, 2522
  flow rate, oligohydramnios, fetus (sheep), 2401
  Forssman shock, thromboxane receptors in (guinea pig), 44
  hysteresis, sleep apnea, 1349
  inflations and deflations, stretch receptor response to (A), 906
  irritation, reflex responses to, CPAP effects, 954
  lumen of, eosinophil accumulation, prostaglandin D_2 effects, 959
  membrane potential, contracture produced by sodium removal, 2078
  mucociliary system, development, neonate (sheep), 824
  mucus, velocity, pyocyanin and 1-hydroxyphenazine effects, 316
  prostacyclin gradient, transepithelial, 276
  thoracic, transverse images, during forced expiration, 1032
Tracheal submucosal gland, secretion, reflex increase in, pulmonary receptors and, 682
Transferrin
  index, lung, 2343
  pulmonary transvascular flux (sheep), 1850
Transforming growth factor, modulation, cytokine production (A), 1714
Transforming growth factor-β
  fibrosis correlation, eye (A), 2179
  glucocorticoid-induced wound healing deficit (A), 1309
  locoregional administration of, hemopoietic progenitor cell proliferation after (A), 2651
  prostaglandin production, lung fibroblasts (A), 2179
  receptor: *see* Receptors
Transplantation, heart, heart-lung interactions, 1447
Triangularis sterni
  contraction, inspiratory action, 1395
  expiratory intercostal activity, 1518
  head-up posture, expiratory muscles and tidal volume, 1438
  response, poikilocapnic hypoxia, 2303
Triglycerides, plasma, age and exercise training effects, 1638
Trypanosoma cruzi, infection, immune deficiency in (A), 914
Tumor idiotype, vaccines (A), 2650
Tumor necrosis factor
  activator, granulocytes (A), 506
  cachectin and
    endothelial cell monolayer permeability and (A), 1713
    lethal bacterial infection (A), 2179
    muscle catabolism and (A), 2180
    permeability of endothelial cell monolayers (A), 2177
  interleukin 1 and, similarities (A), 2182
  internalization of receptors, macrophages (A), 500
  lymphotoxin and, endothelial cell activation induced by (A), 499
  viral induction of, human B cells and monocytes (A), 501
Tumor necrosis factor-α
  cytotoxicity of, umbilical vein endothelial cells (A), 2653
  purification, biologic characterization and (A), 2186

U

U-46619, strong contractile force of, pulmonary artery (A), 2174
Ultrasound, thickness-volume relations, diaphragm, 1560

V

Vagotomy, nonadrenergic bronchodilation, adult and young, 1764
Vagus nerve, C-fibers, stimulation effects on respiratory motor output, 2249
Vascular tone
  elevated, ACh effects, pulmonary circulation, 1495
  response to acetylcholine and, pulmonary vascular bed, 1388
Vasoactive agonists, cAMP and, permeability of endothelial monolayers, 1997
Vasoactive substances, bronchial metabolism (sheep), 1041
Vasoconstriction
  hypoxic pulmonary
    detection by chemiluminescence, 1912
    gas exchange and, 730
    intrapulmonary shunt in, 833
    oxygen radicals in, 1903
    propranolol attenuation of, awake state (A), 2166
    venular response to, 2147
  pulmonary
    ANF protection against right ventricular overload, 1606, 1612
    FUT-175 effects (sheep), 1463
Vasodilation
  calcitonin gene-related peptide, pulmonary vessels, 1265
  cutaneous, conductive and convective heat flow in cold water, exercise in, 2473
  isoproterenol-stimulated, heart failure, 2026
  pulmonary
    ANF and sodium nitroprusside effects, 2269
    bradykinin effects, fetus (lamb), 1512
Vasodilator, coronary reserve, exercise training effects, 1140
Vasopressin
  CSF, sweating in heat stress and (monkey), 134
  hemodynamics and, lung fluid balance (lamb) (A), 494
  oxygen uptake and, sinoaortic denervation (A), 2170
  pulmonary vasodilation induced by (A), 2175
Vastus lateralis muscle, sodium-potassium pump concentration in, aged trained subjects, 2491
Ventilation
  artificial
    air entrainment effects, endotracheal gas injection, 771
    computerized respiratory system, 1687
    validation of oxygen consumption during, 2129
  baroreceptor effects, species dependence, 2116
  chemical drive and, dissociation, breathlessness induced by (A), 1306
  collateral, alveolar pressure during, 1489
  constant-flow
    air entrainment effects on airway pressure, 771
    alveolar pressure during, 1489
  continuous positive pressure, constant flow combination, pulmonary edema, 817
  diaphragm, hypercapnic hyperpnea, newborn (lamb), 1307
  distribution, dilution index format for single-breath tests, 1699
  dynamic exercise, cerebral blood flow in, 744
  emphysema, diet and exercise in, 1048
  high-frequency
    chest wall vs. abdominal displacement during, 1472
    lung pressure and gas transport during, 985
    lung pressure swings during, model, 993
    model bifurcation, 147
    washout from dog lungs (A), 2171
  hypercapnia, exercise-induced (horse), 1958
  hypocapnia and, sympathetic nerve response to hypoxia, 2095
  hypoxia
    aminophylline effects, 1150
    hypercapnia and, contrasting effects, 2101
  lung, dilution index format for single-breath tests, 1699
  maturational and anesthetic effects, apneic threshold (lamb), 643
  mechanical
    bronchopleural fistula, 1591
    lung injury caused by, neonate (piglet), 1007
  neonatal, chronic hypercapnia and, 311
  neural output response to, pregnancy and, 797
  plasma ANF, exercise, hyperpnea, and bronchoconstriction effects, 2427
  pressure-preset, mathematical model, 1081
  preterm, surfactant metabolism and (lamb), 429
  pulmonary, adult never-smokers, 422
  regional
    posture effects on lung expansion, 1371
    variable parenchymal expansion, 226
  regional diaphragmatic shortening, after thoracic surgery, awake state (sheep), 2357
  respiratory sinus arrhythmia, denervated heart, 1447
  sustained maximal, endurance exercise in athletes, 1759

Ventilation-perfusion relations
pulmonary gas exchange
during exercise, 2286
regional alveolar hypoxia, 730
Ventilatory control
acute hyperbaric oxygenation effects, 2351
during exercise, peripheral chemoreceptor stimulation, 2438
furosemide and CSF ions, acute respiratory acidosis, 563
Ventilatory depression
chronic, dopamine and, 186
hypoxic, adenosine role in, 541
Ventilatory patterns, nocturnal, sleep effects, asthmatics, 243
Ventilatory response
hypercapnia and hypoxia effects, respiratory muscle activation, 1776
rowing and cycling exercise, 264
Ventrolateral medulla
pH dynamics within, extracellular fluid, 193
respiratory effects of NMDA, 1814
Virus, hyperresponsiveness to tachykinins and, airway, 1504
Viscoelasticity, tissue, lung impedance, 1623
Vitamin, supplementation effects, young athletes (A), 2168
Volume
closing, dilution index format for single-breath tests, 1699
diaphragmatic, fluoroscopic and Respitrace-derived, 694
end-expiratory, transition, dynamically maintained to relaxed, infant, 2107
excluded, transferrin (sheep), 1850
extrapulmonary, mechanical analysis, thorax and abdomen, 1785
fluid, bronchoalveolar lavage in interstitial lung disease, 1443
inspired, intercostal muscle contraction, 1395
interstitial, albumin exclusion and, lung (sheep), 1323
lung
distension increase and, pneumonectomy (ferret), 1418
during weightlessness, 1542
recurrent laryngeal nerve and, 1179
respiratory system compliance and, newborn, 1192
lung tissue, CT and rebreathing of soluble gas measurement of, 166
microvascular, pulmonary, emboli size and, 663
muscle mitochondrial, aerobic capacity relations and (horse, steer) (A), 495

W

Water
doubly labeled
energy expenditure and, 1922
training for jungle warfare, 14
extravascular lung, acrolein smoke exposure, bronchial artery ligation, 1001
flux, tracheal, neonate (sheep), 824
lung, emboli size effects, 663
vapor pressure of, viscosity of respiratory gases, 472
Weight, bearing, plantaris adaptation and, 636
Weightlessness
exercise training protocols, astronauts, 2191
respiration during, 1542
Work, capacity, 30 days bed rest with isokinetic training, 1820

X

Xenon-133, cerebral blood flow, dynamic exercise and, 744

Z

Zymosan
changes in neutrophil kinetics and, plasma, 88
plasma activated by, superoxide anion release and (lung), 2481

Author Index to Volume 67

Abboud, F. M., 2095, 2101
Abe, T., 488
Abraham, W. M., 406, 824
Acero, A. L., 1093
Adkinson, N. F., Jr., 445
Adnot, S., 2239
Ahmed, A., 824
Albala, M., 2219
Albertine, K. H., 239, 1383, 1887, 2481
Allard, M. F., 88
Allegra, L., 1331, 2627
Allen, G. T., 44
Altose, M. D., 720
Alway, S. E., 24
Amory, H., 534
Anholm, J. D., 1759
Anthonisen, N. R., 1150, 1157, 1164, 1301
Anzueto, A. R., 346, 357
Archer, S. L., 1903, 1912
Argov, Z., 2060
Arita, H., 193
Armstrong, R. B., 1855
Arogyasami, J., 2230
Art, T., 534
Askanazi, J., 1048
Askew, E. W., 1922
Atlan, G., 2055
Aubier, M., 2522
Ayers, G. D., 300

Bachofen, H., 2389
Baldwin, K. M., 2447
Ball, H. A., 811
Ballard, R. D., 243
Barakat, H. A., 1638
Barclay, J. K., 2158
Barer, G. R., 186
Barker, A., 316
Barkin, P., 1001
Barman, S. A., 1495
Barnes, P. J., 856, 1265, 2461
Barry, S. R., 671
Barstow, T. J., 547
Bartlett, D., Jr., 1171, 1179
Barton, R. J., 2230
Bärtsch, P., 1336
Bates, D. V., 1535
Bates, J. H. T., 488, 1220, 2219, 2276
Bauer, K. D., 556, 1585
Baydur, A., 1024
Bayly, W. M., 1958
Beattie, L. L., 1133
Beaver, W. L., 2640
Bebout, D. E., 291, 2286
Becker, C. J., 817
Bee, D., 186
Beehler, C. J., 1070
Bellofiore, S., 276, 1213
Bender, P. R., 1456
Ben-Haim, S. A., 1785
Berezanski, D., 1150, 1164
Berger, E. M., 1070
Berlin, S. L., 2265
Bernardi, L., 1447
Bernauer, E. M., 1820, 2191
Berner, M. E., 1990
Berry, R. B., 780
Berthiaume, Y., 1887
Bhattacharya, J., 839
Bhatte, M. J., 1140
Bickell, W. H., 339
Bigby, B. G., 2565
Bigland-Ritchie, B., 1835
Bishop, M. J., 528
Bitterman, N., 2265
Blake, J. S., 174
Bland, R. D., 1990
Blanksby, B. A., 517
Block, J. E., 1100
Blogg, T., 1341
Bodell, P. W., 2447
Boden, B. P., 926
Bonde-Petersen, F., 786
Bonen, A., 282
Bono, D., 2556
Bonora, M., 32, 578
Boobis, L. H., 2376
Boone, J. B., 2066
Booth, F. W., 1299
Borson, D. B., 1504
Bosco, V. M., 1331
Bouche, P., 1311
Bouissou, P., 141, 523, 1245, 2055
Boukili, M. A., 1479
Boushey, H. A., Jr., 2565
Boussignac, G., 771
Boynton, B. R., 1472
Bradley, T. D., 1776, 2427
Braquet, P., 2269
Brechue, W. F., 2158
Briant, J. K., 1649
Brideshead, T., 780
Broberg, S., 116
Bromberg, P. A., 1535
Brooks, G. A., 756, 765, 1100, 1868
Brooks, S., 2376
Brown, K. A., 2276
Brown, L. V., 606
Brozinick, J. T., Jr., 1807
Brunet, A., 1401, 1409
Brunner, H. R., 250
Brusasco, V., 103
Buccheri, G., 103
Bucciarelli, R. L., 1076
Budinger, T. F., 756
Budzinska, K., 1395
Buerk, D. G., 60, 1578
Buess, C., 2639
Bulbulian, R., 2191
Bureau, M. A., 1226
Bureau, M. F., 1479
Burke, J., 1001
Burki, N. K., 2622
Burse, R. L., 2135
Butler, J. P., 1873, 1930
Byrd, S. K., 2072
Bysani, G. K., 2542

Cain, S. M., 96
Calderini, E., 2556
Calista, C. L., 1422
Canet, E., 1226
Cantu, G., 69
Carlo, W. A., 1591, 2303
Carpenter, J. W., 1638
Carraro, F., 2640
Carroll, J. L., 1226
Casaburi, R., 547, 1106
Casnocha, S. A., 1997
Cathala, H. P., 1311
Caton, D. C., 643
Cerasoli, F., Jr., 2481
Chabrier, P.-E., 2269
Chan, M., 1063
Chance, B., 926, 2060
Chang, H. K., 1032
Chaniotakis, M., 226
Chapler, C. K., 96
Chartrand, D. A., 1032
Chase, P. B., 1791
Cheetham Nevill, M. E., 2376
Chen, M., 466
Cheney, F. W., 528, 730
Chengson, R., 1868
Chenoweth, D., 1463
Cherniack, N. S., 203, 1814, 2296
Chi, E. Y., 528
Chin, K., 1198
Chinzei, M., 2205
Chinzei, T., 2205
Chitano, P., 1331
Christensen, G. C., 713
Christensen, N. J., 786
Christian, E. P., 584
Chung, K. F., 856
Cigarini, I., 2269
Ciurea, D., 2512
Clanton, J. A., 1323
Clausen, T., 2491
Claytor, R. P., 894
Clements, J. A., 1597
Clerici, C., 1764
Closset, J., 833
Clyman, R. I., 1512
Coalson, J. J., 346, 357
Coates, A. L., 889
Cohen, B. S., 1649
Cohn, S. M., 1950
Cole, P. J., 316
Cole, R. J., 2369
Coleridge, H. M., 682
Coleridge, J. C. G., 682
Colin, A. A., 2107, 2112
Conhaim, R. L., 2234
Conley, K. E., 862
Constantinopol, M., 871
Cook, J. A., 811
Cooper, A. L., 1020
Cooper, J. A., 1850
Cooper, J. A. D., Jr., 2316
Corbeil, C., 2219
Cormier, Y., 973
Costill, D. L., 1843
Coupe, M. O., 1265
Craig, I. D., 2147
Crapo, R. O., 2265
Crawford, G., 817, 1489
Crooke, P. S., III, 1081
Cymerman, A., 1456, 2135
Czerwinski, S. M., 2311

Dallman, P. R., 1868
Dal Negro, R., 2627
Dal Palù, C., 52
Daly, J., 1106
Daly, J. A., 2535
D'Angelo, E., 2556
Darmaun, D., 2383
Darr, K. C., 1827
Dascombe, M. J., 1020
Daubenspeck, J. A., 1525
Dauber, I. M., 1185
Davenport, P. W., 643
Davis, B., 682
Davis, G. M., 889
Davis, J. M., 1007
Davis, L., 1032
Davis, P. J., 563
Davis, W. B., 1056
Dawson, C. A., 663
Dayton, C. S., 1443
Deal, E. C., 203
Deffebach, M. E., 1256
DeLany, J. P., 1922
Delp, M. D., 1855
Delpuech, C., 1032
De Marzo, N., 1331
Demedts, M., 694
Dempsey, J. A., 1958
Deniz, Y. F., 1950
Derenne, J. P., 1311, 2219
Deschamps, C., 655
Deschepper, K., 694
Desmecht, D., 534
Desmeules, M., 973
De Souza, M. J., 736
De Troyer, A., 599, 1438, 2614
Deuster, P. A., 160
Devaux, F., 141
Devenny, S. G., 1377
Di Blasi, P., 1331
Dickerson, B., 1007
Dickson, K. A., 2401
Di Giulio, G., 232
Di Marco, A., 52
DiMarco, A. F., 720, 1395
Dinger, B., 484
Di Stefano, A., 1331
Dixon, C. M. S., 2461
Djokic, T. D., 959, 1504
Dodd, S., 300
Dodd, S. L., 96
Doerschuk, C. M., 88
Dohm, G. L., 1638
Domino, K. B., 730
Dorkin, H. L., 2323
Douglass, L. W., 160
Doyle, M. P., 2593
Drab, E. A., 1585
Drake, S. K., 1070
Drazen, J. M., 1213, 2504
Drummond, W., 1076
Dubray, C., 141
Dunn, M. M., 556
Durham, S. K., 2495
Dusser, D. J., 1504
Dutton, K., 517
Duvivier, C., 1623, 1973

Edelman, N. H., 1747
Edgerton, V. R., 945

Edwards, J. G., 2335
Effros, R. M., 1106
Eidelman, D. H., 276
Eisenstein, B. L., 528, 730
Elayan, I. M., 2230
Eldridge, M. A., 2579
Ellis, R. K., 902
Elwyn, D. H., 1048
Emery, D. L., 959
Enad, J. G., 620
Engel, L. A., 1542
Engstrom, P. C., 688
Enslin, J., 39
Enson, Y., 1717
Ertl, A. C., 1820
Eskin, S. G., 1997
Essén-Gustavsson, B., 83, 570
Estenne, M., 1438, 1542
Estrade, P. Y., 1245

Fabbri, L. M., 1331
Fahey, P. J., 166
Fairshter, R. D., 780
Falduto, M. T., 2311
Farkas, G. A., 599, 1438, 2614
Farrar, R. P., 69
Farre, R., 1623, 1973
Farrukh, I. S., 445
Faulkner, J. A., 671
Fazio, G., 52
Feldman, H. A., 2420
Feroah, T., 2087
Ferretti, G., 2473
Fick, G., 1887
Fidone, S., 484
Filley, G. F., 2331
Fink, M. P., 1950
Fink, W. J., 1843
Fishman, A. P., 2032
Fitzgibbon, C., 1463
Fitzsimons, D. P., 2447
Flavahan, N. A., 1294
Fleury, B., 1311
Floerchinger, C., 1443
Flora-Ginter, G., 736
Flückiger, J. P., 250
Flynn, J. T., 2481
Flynn, M. G., 2066
Forbes-Ewan, C. H., 14
Forczek, S., 804
Forni, C., 1617
Forster, R. E., 2265
Forte, V. A., Jr., 2135
Fortney, S. M., 894
Fountain, M. R., 926
Fournier, M., 620, 2522
France, M., 2586
Frantz, E., 1512
Frantz, I. D., III, 1472
Fredberg, J. J., 1213, 1472, 2408
Fredholm, B. B., 541
Freed, A. N., 1727, 2571
Freeman, J., 300
Freidel, J. F., 563
Freitag, L., 614
Frey, M. J., 2026
Friedlander, A. L., 1100
Froguel, P., 2383
Fukuda, Y., 1754
Fukunaga, T., 2631
Fukushima, E., 324

Galen, F. X., 141
Galey, W. R., 2593
Gallina, C., 2212
Garcia, L., 2579
Gardiner, P. F., 636
Gardner, D. G., 2565
Gaujour, B., 2269
Gause, G. E., 1076
Gautier, H., 32, 578
Gee, M. H., 2481
Geer, M. R., 339
Genant, H. K., 1100
George, J. C., 282
Georgopoulos, D., 1150, 1157
Gerzer, R., 938
Giese, J., 786
Gil, J., 2512
Gisolfi, C. V., 128, 134
Giuliano, G., 52
Giurdanella, C. A., 2323
Gladstone, I. M., 1377
Glass, G., 1472, 2107
Gleeson, K., 1630
Gluckman, P. D., 1113
Glucksberg, M. R., 839
Goerke, J., 2389
Goetz, K. L., 736
Goldstein, S. A., 1048
Gollnick, P. D., 1958, 2072
Gonyea, W. J., 24
Gonzalez, C., 484
Gonzalez, R., 291
Gonzalez-Camarena, R., 2286
Goodman, J., 682
Gorfien, S. F., 397
Goske, M., 166
Gottlieb, M., 570
Goubel, F., 1245
Grady, M., 1887
Graf, P. D., 959, 2397
Graham, S. C., 945
Graham, T. E., 282
Grantham, C. J., 1041
Graves, D. J., 1670
Green, H. J., 210
Greene, E., 1463
Greenleaf, J. E., 507, 1820, 2191
Gregg, G. C., 14
Gregg, S. G., 756, 765
Gremaud, G., 250
Griffith, B., 1447
Gross, N. J., 414
Groth, S., 422
Groves, B. M., 1456
Grumbt, W. H., 24
Guezennec, C. Y., 1245
Guggenbühl, W., 2639
Gunst, S. J., 1294
Gurtner, G. H., 445, 2542
Gustin, P., 534
Gutierrez, G., 1093, 2163

Haab, P., 291, 2286
Haeberli, A., 1336
Haji, A., 2257
Hakim, T. S., 1277
Hales, C. A., 1001
Hall, E. R., 1997
Halushka, P. V., 811
Hamilton, J. T., 2147
Hancock, B. J., 628
Hannhart, B., 797
Hansen, J. E., 1106
Hansen, T. N., 2586
Harada, H., 2432
Harding, R., 2401
Harf, A., 771, 1764
Hargreave, F. E., 792
Hargrove, D. M., 1770
Harris, T. R., 1323
Haselby, K. A., 1898
Haselton, F. R., 2032
Haskell, W. L., 2191
Hasty, D., 252
Hatherill, J. R., 2432
Hatridge, J., 2257
Hatzfeld, C., 1032
Hauschka, E. O., 945
Haxhiu, M. A., 203, 2296, 2303
Hayes, D. A., 1855
Hazinski, T. A., 2586
Hazucha, M. J., 1535
Heim, J. M., 938
Helmers, R. A., 1443
Henriksen, O., 786
Hermansen, F., 422
Herzyk, D. J., 1056
Hesse, B., 786
Hesslink, R. L., Jr., 1208
Heymann, M. A., 1512
Hickson, R. C., 2311
Hill, N. S., 1606, 1612
Hiraga, K., 954
Hirai, M., 1198
Hitchcock, H. C., 677
Hitzig, B., 2527
Hlastala, M. P., 730
Hodgson, D. R., 1958, 2072
Hoffman, E. A., 707
Hoffmann, H., 2432
Hoffstein, V., 1349, 2427
Hogan, M. C., 291, 2286
Hogg, J. C., 88
Hoidal, J. R., 2542
Hokanson, J. A., 366
Holloszy, J. O., 466
Hollowell, D. E., 270
Holm, B. A., 688
Holmes, H. R., 2249
Holtby, S. G., 1150, 1164
Homer, L. D., 1208
Homma, I., 199
Honda, Y., 954, 970, 2006
Hoorn, E., 1687
Hopkins, C., 2542
Hopkins, S. R., 1119
Hoppensack, M., 628
Hoppin, F. G., Jr., 1930, 1941
Horowitz, J. M., 383
Houmard, J. A., 1843
Houston, C. S., 2135
Howell, R. E., 2032
Hoyt, R. W., 1922
Huang, J., 2631
Huang, Q., 1171, 1179
Huang, W., 232
Huber, I., 1336
Hubmayr, R. D., 655
Hudson, T. L., 324
Hughson, R. L., 210, 2640
Hultman, E., 2243
Hunninghake, G. W., 1443
Husney, R. M., 1056
Hussain, S. N. A., 2141
Hussein, F., 720
Huszczuk, A., 2608
Hutchison, A. A., 643
Hwang, J.-C., 1518
Hyde, R. W., 166
Hyman, A. L., 371, 1388

Icenogle, M. V., 324
Ichikawa, K., 193
Ichino, A., 250
Ikegami, M., 429
Inman, J. G., 1
Innes, J. A., 2608
Inoue, T., 2078
Ip, C., 804
Ip, M. M., 804
Isabey, D., 771
Ishida, K., 1133
Ishihara, Y., 2481
Ishizaka, A., 2432
Ito, Y., 2078
Ivy, J. L., 1807
Iwase, S., 980

Jackowski, J. T., 1041
Jackson, A. C., 2323
Jacobs, H. C., 1377
Jacobs, I., 438, 2466
Jacoby, D. B., 1504
Jan, D. L., 147
Jandrain, B. J., 76
Jansen, J. R. C., 1687
Javaheri, S., 563
Jiang, T. X., 694
Jobe, A., 429
Johanson, W. G., Jr., 346
Johnson, D. C., 2527
Johnson, E. C., 324
Johnson, R. L., Jr., 1759
Johnston, B. M., 1113
Jones, J. H., 862, 871, 879
Jonson, B., 2219
Journell, T. W., 894
Joyner, M. J., 1791
Jung, W., 1001

Kacmarek, R. M., 2357
Kadowitz, P. J., 371, 377, 1388
Kalhan, S. C., 221
Källman, M., 123
Kamm, R. D., 147
Kamp, D. W., 556
Kandarian, S. C., 2600
Kaplowitz, M. R., 1371
Karas, R. H., 862, 871, 879
Kastello, G. M., 1807
Katona, P. G., 2116
Katz, I., 1349
Kaufman, M. P., 256
Kavanagh, M. F., 438
Kawahara, K., 110
Kawahara, N., 2205
Kawashima, A., 1982
Kayar, S. R., 862
Kazemi, H., 2527
Kehrer, J. P., 69
Keller, F., 1447
Kelly, E., 174, 181
Kelly, L. J., 1133
Kelly, P. L., 243
Kelly, S., 1277
Kelsen, S. G., 713
Kennedy, K. A., 2586
Kennedy, T. P., 2542
Kern, M., 1638
Keromes, A., 141, 523
Khoo, M. C. K., 985, 993
Kiens, B., 19
Kim, C. S., 614, 2579
Kimball, W. R., 2357
Kimura, H., 1754
Kindig, N. B., 2331
King, R. J., 346, 357
Kinney, J. M., 1048

Kirk, K. R., 1898
Klempa, K. L., 1868
Klitgaard, H., 1401, 1409, 2491
Knap, A., 556
Knight, M. E., 1076
Knuth, S. L., 1525
Kobayashi, T., 1982
Kobylarz, E. J., 1525
Kochi, T., 2276
Koenig, S. M., 181
Kondo, C., 1286
Kraemer, W. J., 736
Kram, R., 1692
Kreil, E., 1463
Kubo, K., 1982
Kuca, B., 39
Kulik, A., 250
Kumagai, S., 110
Küng, M., 2622
Kuno, K., 1198
Kuriyama, T., 1198, 1754
Kurowski, T. T., 2311
Kurth, C. D., 643
Kuwana, S., 193
Kvetan, V., 1048
Kyle, S. B., 160

Lacroix, M., 76
La Forge, J., 973
Lagercrantz, H., 541, 1271
Lahiri, S., 232, 239, 1383, 2351
Lai-Fook, S. J., 606, 1371
Lamaziere, C., 1409
Lambert, C. P., 2066
Lamborghini, D., 1001
Lammers, J.-W. J., 856, 2461
Lämmle, B., 1336
Lamont, L. S., 221
Lang, C. H., 1770
Lanoce, V., 2026
Larmignat, P., 141
Lartigue, M., 141
Laughlin, M. H., 1140
Launois, S., 1311
Lazar, R., 2542
Lee, P. C., 1950
Leeman, M., 833
Lefebvre, P. J., 76
Leff, A. R., 174, 181
Léger, L., 1643
Leigh, J. S., Jr., 2060
Leiter, J. C., 1525
Lejeune, P., 833
Lekeux, P., 534
Lesty, C., 1409
Leszczynski, L. E., 1192
Le-Trong, J.-L., 523
Lev, A., 713
Levine, E. M., 2032
Levitt, R. C., 1125
Levy, P., 2219
Lewis, S. B., 1208
Lichtenstein, O., 1785
Lightfoot, J. T., 894
Liistro, G., 933
Lillo, R. S., 1354
Lindholm, A., 570, 862, 871, 879
Linehan, J. H., 663, 1898
Littner, M. R., 846
Liu, J., 2565
Lodato, R. F., 1551
Long, W. M., 614
Longworth, K. E., 862, 879
Lorenz, R., 938
Lorino, A. M., 2055
Lott, F. D., 846
Ludwig, M. S., 1213, 1220
Lund, N., 1093

Maarek, J. M., 1032
Maass-Moreno, R., 2116
Macarak, E. J., 397
MacCallum, M. E., 1354
Macdonald, A. G., 1250
Mack, M. M., 174
MacLeod, I. M., 472
Macquin-Mavier, I., 1764
Magder, S., 2141
Maguire, M. S., 736
Mahajan, R. K., 1699
Mak, J. C. W., 1265
Makita, K., 2129
Malanchere, E., 1479
Malconian, M. K., 2135
Malik, A. B., 1850
Maloney, J. E., 1286
Mano, T., 980
Mansell, A. L., 1422
Mapp, C. E., 1331
Marc, R., 1401
Maresh, C. M., 736
Margulies, S. S., 707
Mariassy, A. T., 824
Marini, C., 1093
Marini, J. J., 1081
Maris, J., 2060
Mark, A. L., 2095, 2101
Markham, D. R., 2125
Marks, R. H. L., 1638
Maron, M. B., 305
Marshall, P., 1319
Martin, J. G., 276
Martin, P., 1643
Martin, R. J., 243, 2303
Martineau, L., 2466
Maruyama, R., 2006
Massarelli, P. S., 210
Matalon, S., 688
Mathew, O. P., 366, 1428
Maton, B., 1409
Matthay, M. A., 1887
Matthes, R. D., 128, 134
Mazzeo, R. S., 756, 1319, 1638
McBride, J. T., 1418
McClellan, M. D., 1185
McCormack, D. G., 1265
McCray, M., 824
McCullough, R. E., 1456
McCullough, R. G., 1456
McCully, K. K., 926, 2060
McCusker, M. T., 856, 2461
McCutcheon, L. J., 2072
McDonald-Gibson, W. J., 316
McEvoy, R. D., 2454
McGovern, J. F., 1525
McIntire, L. V., 1997
McKenzie, D. C., 1119
McKnight, T., 300
Mead, J., 2107, 2112
Medbø, J. I., 1881
Mehlsen, J., 786
Meignan, M., 2055
Mélot, C., 833
Meno, F., 1447
Menon, A. P., 749
Mercurio, M. R., 1377
Merlet, P., 523
Merrill, W. W., 2316
Mészáros, K., 1770
Metlay, L., 1007
Michael, J. R., 445, 2542
Michaud, T. J., 2066
Michel, R. N., 636
Mikami, M., 1754
Miki, H., 1873
Milic-Emili, J., 1013, 1048, 2219, 2556
Miller, M. J., 1655, 2420
Minette, P., 856
Minette, P. A. H., 2461
Mink, S. N., 1164
Minotti, J. R., 324
Miserocchi, G., 1967
Mitchell, G. S., 2438
Mitchell, J. B., 1843
Mitchell, J. H., 744
Mitchell, R. W., 174, 181
Mitra, J., 1814
Mitzner, W., 1125, 2639
Miyamoto, Y., 110
Mizoguchi, H., 2553
Mizuno, M., 19, 592
Moalli, R. R., 1422
Mokashi, A., 232, 239, 2351
Moleski, R. W., 2066
Molinoff, P. B., 2026
Monod, H., 1401, 1409
Monson, C. B., 383
Montalescot, G., 1463, 2357
Moore, B. J., 2420
Moore, L. G., 797
Moore, T., 2191
Morikawa, T., 2006
Mormino, P., 52
Morrissey, B. L. L., 14
Mortola, J. P., 311
Morton, A. R., 517
Morton, R. H., 885
Mos, L., 52
Mosora, F., 76
Moss, I. R., 1
Mossberg, K. A., 1569
Mueller, S. N., 2032
Mukai, D., 780
Müller, T., 938
Munari, L., 52
Munoz, N. M., 174
Munro, N. C., 316
Murphy, T. M., 174
Musashi, H., 478

Nadel, J. A., 959, 1504, 2397
Naeije, R., 833
Nagasaka, T., 963, 2154
Nahormek, P. A., 1560
Nahum, A., 1489
Nair, P. K., 60, 1578
Nakazono, Y., 110
Narine, K. R., 414
Navajas, D., 1973
Negrini, D., 1967
Nelson, D. P., 1903, 1912
Neufeld, G. R., 1670
Nishibayashi, Y., 2006
Nishimura, M., 2527
Nishino, T., 954
Noble, E. G., 2049
Notter, R. H., 1007
Numata, K., 2205
Nunn, J. F., 2129
Nussberger, J., 250

Obeso, A., 484
O'Drobinak, D. M., 2158
Oelz, O., 1336
Ogletree, M. L., 44
Ogston, D., 1250
O'Hanley, P. T., 2432
Ohi, M., 1198
Ohira, M., 466
Ohira, Y., 466
Ohya, N., 2631
Okunieff, P., 2527
Oldmixon, E. H., 1930, 1941
Olha, A. E., 636
Olsen, R. G., 1208
Ono, Y., 2006
Oostveen, E., 1973, 2212
Oppenheimer, L., 628, 1164
Orr, D., 1776
Ou, L. C., 1606, 1612
Outerbridge, E. W., 889
Overand, P. T., 528
Overholser, K. A., 1140
Overholt, J. L., 1814
Owen, M. D., 128, 134
Oyama, J., 383

Paiva, M., 534, 1542
Palatini, P., 52
Palecek, F., 1428
Pardy, R. L., 1341
Paré, P. D., 1341
Pariente, R., 2219, 2522
Parker, N. B., 1070
Parker, R. E., 1323
Pascoe, D. D., 1843
Patel, D. G., 221
Patel, D. K., 243
Paterson, N. A. M., 2147
Patterson, S. L., 383
Pavlovic, D., 2522
Pearson, D. R., 1843
Penney, D. G., 239, 1383
Penney, D. P., 1007
Pepper, S., 1208
Perez-Padilla, J. R., 2257
Péronnet, F., 453
Persson, S. G. B., 570
Peslin, R., 1623, 1973, 2212
Pessina, A. C., 52
Peters, J. I., 346, 357
Peters, S. P., 2481
Pettigrew, F. P., 2049
Phipps, R. J., 824
Pickens, D. L., 749
Pickett, C. K., 797
Pickles, D. M., 1250
Pinsky, M. R., 1447
Pipkin, A. C., 1422
Pirnay, F., 76
Plewes, D. B., 166
Polak, M. J., 1076
Pollak, E. R., 1489
Poole, D. C., 2286
Popkin, J., 1776
Popovich, K. J., 181
Possmayer, F., 2389
Pou, N. A., 1323
Powell, A. J., 1692
Powell, W. S., 276
Powers, S. K., 300
Prabhakar, N. R., 541, 1814
Presson, R. G., Jr., 1898
Pretolani, M., 1479
Priestly, A., 429
Prihoda, T. J., 346

Quinn, D., 1001
Quinn, J. A., 1670

Qvist, J., 2357

Raffin, T. A., 2432
Ramanathan, M., 1759
Ramsdale, E. H., 792
Rathat, C., 523
Ratjen, F., 1192, 1662, 2107, 2112
Rebuck, A. S., 1349
Reddy, P. S., 1447
Reeves, J. T., 1456
Reid, M. B., 1655, 2420
Reid, W. D., 1341
Reiss, T. F., 2565
Remmers, J. E., 32, 2249, 2257
Ren, J.-M., 648, 2243
Rennie, D. W., 2473
Repine, J. E., 1070
Reynolds, A. M., 2454
Rezzonico, R., 311
Richalet, J.-P., 141, 523
Richter, E. A., 19
Rickaby, D. A., 663
Riddle, W. R., 2343
Rider, E., 429
Ridings, J. W., 671
Robatto, F. M., 2556
Robert, J.-J., 2383
Robertson, R. J., 1862
Robinson, D., 1463
Robinson, T., 547
Roca, J., 291, 2286
Rochester, D. P., 1560
Rochester, N. L., 606
Rock, P. B., 2135
Rodarte, J. R., 226, 655, 707
Rodenstein, D., 933
Rodriguez-Zayas, J., 2066
Romero, P. V., 488, 1220
Rongier, M., 2383
Rosati, G., 792
Roselli, R. J., 1323, 2343
Rosenthal, F. S., 2014
Ross, R., 1643
Rossing, N., 422
Rostain, J.-C., 1617
Roth, Z., 2060
Rothberg, A. D., 472
Rothschild, H. R., 1950
Rothwell, N. J., 1020
Rotto, D. M., 256
Roussos, C., 2141
Rowe, R. W., 1569
Roy, R., 1643
Roy, R. R., 945
Royston, B., 2129
Rubal, B. J., 339
Rubin, D. B., 1585
Rubinstein, I., 1504, 2427, 2565
Ruffini, L., 429
Runold, M., 541
Ruscio, B. A., 2135
Rutman, A., 316
Ryan, J. P., 713
Ryan, U. S., 1041

Saathoff, M. C., 243
Saetta, M., 1331
Sagawa, Y., 1198
Sagone, A. L., Jr., 1056
Sahlin, K., 116, 648, 2640
Saidel, G. M., 1785
Saito, M., 980
Sakakibara, Y., 2006
Salonen, R. O., 1256
Samsel, R. W., 1234
Samson, H., 300
Sanders, M., 1447
Sanderson, R. J., 1070
Sanii, R., 699
Sant'Ambrogio, F. B., 1428
Sant'Ambrogio, G., 1428
Santiago, T. V., 1747
Sardella, G. L., 1606, 1612
Sasaki, K., 2006
Sassoon, C. S. H., 1024
Sato, J., 488
Scardella, A. T., 1747
Schaefer, S. L., 2438
Schantz, P. G., 123
Scheen, A. J., 76
Scheerer, R. G., 1990
Schefft, G. L., 749
Schellenberg, R. R., 1133
Schoel, W. M., 1286
Schoeller, D. A., 1922
Schoene, R. B., 264
Schroeder, T., 744
Schulman, L. L., 1717
Schultz, E., 1827
Schultz, H. D., 682
Schulz, D. A., 1958
Schumacher, W. A., 44
Schumacker, P. T., 1234, 1489
Schürch, S., 2389
Sciuto, A. M., 2542
Scott, G. C., 2622
Seals, D. R., 1791, 1801
Secher, N. H., 592, 744
Seidenfeld, J. J., 357
Seidner, S., 429
Sekiguchi, M., 1982
Sekizawa, K., 2397
Selig, W. M., 2495
Senteno, E., 1495
Sériès, F., 973
Serrurier, B., 1245
Severinghaus, J. W., 902
Shapiro, A. H., 147
Shapiro, D. L., 1007
Shapiro, J. I., 2331
Shardonofsky, F., 1013
Sharp, M. A., 1922
Sharratt, M. T., 210
Sherpa, A. K., 232, 1383
Sherrill, D. S., 2331
Shido, O., 963, 2154
Shimada, S. G., 1734, 1740
Shore, S. A., 1213, 2504
Shukla, N., 1638
Sibbitt, R. R., 324
Sibuya, M., 199
Sieck, G. C., 620
Sielczak, M. W., 406, 824
Sietsema, K. E., 2535
Simchuk, M. L., 1070
Similowski, T., 1311, 2219
Skaburskis, M., 1013
Slutsky, A. S., 1349
Smith, D. B., 357
Smith, S., 1495
Smoak, B. L., 160
Soifer, S. J., 1512
Solarte, I., 2608
Solèr, M., 406
Somers, V. K., 2095, 2101
Speck, D. F., 1364
Spicer, K. M., 811
Spitzer, J. J., 1770
Sprung, J., 655
Srinivasan, M., 1271
Stadeager, C., 786
Stainsby, W. N., 2158
Stamenovic, D., 2408
Stanek, K., 2357
Stănescu, D., 933
Stark, A. R., 1192, 2107, 2112
Starnes, J. W., 69
Stebbins, C. L., 256
Steiger, P., 1100
Steinbacher, T. E., 44
Stevens, P. A., 1597
Stevenson, J. S., 824
Stiles, C. M., 1024
Stitt, J. T., 1734, 1740
St. John, W. M., 1171, 1179, 1518
Stork, R. L., 96
Story, D., 291, 2286
Strange, S., 19
Straub, P. W., 1336
Straub, R., 879
Stray-Gundersen, J., 24, 1759
Stream, C. E., 2571
Stropp, J. Q., 1294
Stubbs, H. A., 1100
Su, M., 528
Sugimori, K., 954
Suki, B., 1623, 1973
Supinski, G., 720, 1395
Suratt, P. M., 270
Sutton, J. R., 2135
Suwa, K., 2205
Suzukawa, M., 2205
Suzuki, S., 1873
Suzuki, Y., 478
Swank, A., 1862
Swank, S. M., 1024
Syabbalo, N. C., 2639
Sylvester, P. W., 804
Szal, S. E., 264
Sznajder, J. I., 817, 1489

Tabata, I., 1881
Taegtmeyer, H., 1569
Tahamont, M. V., 2481
Takahashi, Y., 1286
Takasaki, Y., 1776
Takishima, T., 1873
Tanaka, Y., 970, 2006
Taylor, A. E., 1495
Taylor, C. R., 862, 871, 879
Taylor, G., 316
Taylor, G. E., 584
Taylor, J. A., 1791
Taylor, W. A., 316
Tazawa, H., 478
Teague, W. G., Jr., 1990
Terry, P. B., 445
Tesch, P. A., 83
Tewson, T. J., 1569
Thach, B. T., 749
Thibault, G., 453
Thibault, L. E., 397
Thiriet, M., 1032
Thomas, C. K., 1835
Thomas, S. N., 744
Thomashow, B., 1048
Thompkins, B., 1383
Thomson, R. J., 1133
Thorsson, A., 83
Thron, C. D., 1606
Tidball, J. G., 1063
Tipton, C. M., 2335
Toga, H., 2631
Tohidi, W., 445
Tolley, E., 2542
Torbati, D., 2351
Torgan, C. E., 1807
Torok, D. J., 894
Torrealba, P. J., 824
Torres, A., 2357
Torri, G., 2556
Toth, K. M., 1070
Towart, R., 316
Tracey, W. R., 2147
Trad, L., 1456, 2135
Tran, N. H., 985
Trowbridge, T. S., 1820
Truwit, J. D., 1081
Tuchler, M., 926
Turner, M. J., 472

Ueno, O., 291, 2286
Underwood, D. C., 377
Utell, M. J., 166

Vachiéry, J.-L., 833
Vale, M. J., 1020
Vallerand, A. L., 438
Vallinis, P., 889
Vandewalle, H., 1401
Van Dijk, J. P., 282
Van Goudoever, J., 1687
Van Liew, H. D., 1699
van Lunteren, E., 2296, 2303
Vargaftig, B. B., 1479
Vehrs, P. R., 2230
Veicsteinas, A., 2473
Veriter, C., 933
Verschakelen, J. A., 694
Versprille, A., 1687
Veyrac, P., 523
Vieth, E., 390
Violante, B., 103
Viossat, I., 2269
Viswanathan, M., 282
Vock, P., 1336
Voelkel, N. F., 330

Wach, R. A., 186
Wade, C. E., 1820
Waeber, B., 250
Wagner, E. M., 2639
Wagner, P. D., 291, 2286
Wagner, W. W., Jr., 1898
Wait, J. L., 1560
Walker, B. R., 2593
Walker, S., 1157
Walsh, M. C., 1591
Walters, B. J., 655
Wandtke, J. C., 166
Wang, H., 1950
Wang, H. L., 330
Wang, M., 713
Wanner, A., 614, 824, 917, 1041, 2579
Wasserman, K., 547, 2535, 2608, 2640
Watanabe, T., 963
Waters, D. R., 14
Watson, D., 316
Webber, S. E., 1256
Wehling, M., 938
Weibel, E. R., 871
Weil, J., 938
Weil, J. V., 797, 1185
Weinreich, D., 584
Weir, E. K., 1903, 1912
Weissman, C., 1048

Welton, A. F., 2495
West, J. B., 2163
Wewers, M. D., 1056
Whalen, W. J., 60, 1578
Whang, J. M., 1670
Whipp, B. J., 2608, 2640
White, C. W., 1070
White, D. P., 1630
White, S. R., 181
White, T. P., 2600
Whitelaw, W. A., 2087, 2125
Whyte, R. I., 2357
Widdicombe, J. G., 1256, 2553
Wiggs, B. J., 1341
Williams, C., 2376
Willis, W. T., 765, 1868
Wilson, A. F., 780
Wilson, J. R., 2026
Wilson, R., 316
Wilson, T. A., 226
Winder, W. W., 2230
Winston, F. K., 397
Winter, V. T., 346
Wise, L. E., 324
Wise, W. C., 811
Witzgall, H., 938
Wohl, M. E. B., 1192, 1662, 2107, 2112
Wolfe, R. R., 2640
Wood, J. A., 1717
Wood, L. D. H., 817, 1489
Woodall, D. L., 366
Woods, J. J., 1835
Wright, J. R., 1597
Xie, A., 1776
Yamada, T., 429
Yamada, Y., 2205
Yamamoto, Y., 1271, 2640
Yamashiro, P., 993
Yamashiro, S. M., 993
Yang, J., 445
Yang, Q.-H., 1371
Ye, T.-H., 985
Yeh, E., 2608
Yen, S., 1612
Yiin, K.-T., 2571
Yoneda, Y., 2154
Yonemaru, M., 2432
Yost, W. T., 1560
Younes, M., 699
Young, A. J., 1456
Young, J. C., 39
Young, P. M., 2135
Yu, J., 682
Zak, R., 2311
Zaleski, S., 1898
Zamel, N., 1349, 2427
Zapol, W. M., 1463, 2357
Zavala, D. C., 2095, 2101
Zheng, H., 2432
Zhou, D., 1171, 1179, 1518
Zinman, R., 1192, 1662
Zwart, A., 2212
Zwillich, C. W., 1630